NPS ARCHIVE
1997.06
JIMENEZ, J.

NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIFORNIA

THESIS

MARITIME POWER IN COLOMBIA, ANALYSIS AND PROPOSAL OF STRATEGY

by

Juan J. Jimenez

June 1997

Thesis Co-Advisors: Jan S. Breemer
Roger D. Evered

Thesis
J502

Approved for public release; distribution is unlimited.

DUDLEY KNOX LIBRARY
NAVAL POSTGRADUATE SCHOOL
MONTEREY CA 93943-5101

REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE June 1997	3. REPORT TYPE AND DATES COVERED Master's Thesis

4. TITLE AND SUBTITLE MARITIME POWER IN COLOMBIA, ANALYSIS AND PROPOSAL OF STRATEGY

5. FUNDING NUMBERS

6. AUTHOR(S) Juan J. Jimenez

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Naval Postgraduate School
Monterey, CA 93943-5000

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT *(maximum 200 words)*

This study examines Colombia's maritime vision. Although Colombia has a maritime window on the world it has historically underutilized and underprotected its sea resources. This study argues that the Colombian Government does not have an effective and clear vision as a maritime nation. Chapter I presents the research questions and a brief background of Colombia. In Chapter II, a model of the current maritime management of Colombia is developed. In Chapter III, this model is compared with similar management models used in other Latin American countries. Chapter IV is an Organizational Analysis of Colombia's maritime related agencies. Chapter V develops and suggests a strategy to better manage maritime activities in Colombia. Finally, the study's conclusions and recommendations are presented. The study concludes that Colombia as a state has a low maritime consciousness and that there is no common maritime vision to support government policies. The study recommends that an advisory and coordination entity be set up to help create this vision and provide for long-term management of Colombia's maritime resources.

14. SUBJECT TERMS Maritime Power, Colombia, Maritime Strategy, Integrated Maritime Policy			15. NUMBER OF PAGES 99 16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18 298-102

Approved for public release; distribution is unlimited.

MARITIME POWER IN COLOMBIA, ANALYSIS AND PROPOSAL OF STRATEGY

Juan J. Jimenez
LCDR, Colombian Navy
B.S., Colombian Naval Academy, 1994

Submitted in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE
IN
INTERNATIONAL RESOURCE PLANNING AND MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
June 1997

NPS
1997
June

DUDLEY KNOX LIBRARY
NAVAL POSTGRADUATE SCHOOL
MONTEREY CA 93943-5101

ABSTRACT

This study examines Colombia's maritime vision. Although Colombia has a maritime window on the world it has historically underutilized and underprotected its sea resources. This study argues that the Colombian Government does not have an effective and clear vision as a maritime nation. Chapter I presents the research questions and a brief background of Colombia. In Chapter II, a model of the current maritime management of Colombia is developed. In Chapter III, this model is compared with similar management models used in other Latin American countries. Chapter IV is an Organizational Analysis of Colombia's maritime related agencies. Chapter V develops and suggests a strategy to better manage maritime activities in Colombia. Finally, the study's conclusions and recommendations are presented. The study concludes that Colombia as a state has a low maritime consciousness and that there is no common maritime vision to support government policies. The study recommends that an advisory and coordination entity be set up to help create this vision and provide for long-term management of Colombia's maritime resources.

TABLE OF CONTENTS

I. INTRODUCTION 1

A. OBJECTIVE 1

B. BACKGROUND AND IMPORTANCE 1

C. APPROACH AND METHODOLOGY 4

D. ORGANIZATION OF STUDY 5

E. LIMITATIONS OF STUDY 7

II. THEORIES OF MARITIME POWER 9

A. ALFRED T. MAHAN (1880) 10

1. Natural Conditions 10

2. Characteristics of its Population 11

3. Context of Mahan's Theory 12

B. JULIAN STAFFORD CORBETT (1911) 14

C. J. R. HILL (1968) 15

1. Trade and Access 15

2. Shipbuilding Industry 16

3. Exploitation of Natural Resources 17

4. Military Power at Sea 17

D. GEOFREY TILL (1984) 17

E. MICHAEL A. MORRIS (1987) 19

F. HAROLD J. KEARSLEY (1992) 21

G. ADM. JORGE MARTINEZ (1993) 23

1. Maritime Transportation 24

2. Source of Food 24

3. Energetic Resources 24

4. Mineral Resources 24

5. Regulatory Factors 25

6. Scientific-Technological Capabilities 25

7. Politico-Strategist 25

H. MARITIME POWER IN COLOMBIA 26

1. Maritime Power and Fields of National Power 26

2. Proposed Model for Maritime Power 27

III. MARITIME POWER FACTORS IN COLOMBIA COMPARED TO OTHER LATIN-AMERICAN COUNTRIES 31

A. GEOGRAPHICAL AND PHYSICAL FEATURES 32

B. RESOURCES/USES OF THE OCEANS 33

1. Fish Catches 35

2.. Merchant Shipping Fleets 36

3. Sea-going Infrastructure 37

C. SCIENCE & TECHNOLOGY 39

1. Human Resources 40

D. JUDICIAL AND ENVIRONMENTAL REGULATIONS 41

E. MARITIME POLICY AND MANAGEMENT 43

F. NAVAL POWER 45

G. GENERAL COMPARISON 46

IV. ROLES AND ORGANIZATION OF MARITIME RELATED AGENCIES IN COLOMBIA 49

A. ROLES AND MISSION OF MARITIME RELATED AGENCIES 50

1. Colombian Commission of Oceanography 50

2. General Directory for Territorial Sovereignty 50

3. Colombian Navy (A.R.C.) 52

4. National Institute for Fishery and Aquaculture (INPA) 55

5. Exploitation of Non-living Resources 56

6. National Program for Marine Science and Technology 56

7. General Directory for the Physical Environment 57

8. Ports Management Superintendency 58

B. ORGANIZATIONAL ANALYSIS 59

1. The Star Model 59

V. PROPOSED STRATEGY FOR THE DEVELOPMENT OF COLOMBIA AS A MARITIME NATION 65

A. CURRENT REALITY OF COLOMBIA'S MARITIME POWER 65

B. CHANGES IN LAST TWENTY YEARS 66

1. New Environmental Tasks 66

2. Port Management 67

3. Naval Industry 67

4. Merchant Shipping 68

5. Fishing 68

6. Science and Technology 68
7. Naval Power 68
C. FUTURE SCENARIOS FOR COLOMBIA'S MARITIME POWER 69
1. The Maritime Status Quo 69
2. Development of Colombia as a Maritime Nation 69
D. STRATEGY 70
1. Vision 71
2. What Does Colombia Have to do to Pursue This Vision? 71
3. Conditions for Success 72
4. The Role of The Colombian Navy 72
5. Suggested Objectives 73
E. SUMMARY 74

VI. CONCLUSIONS AND RECOMMENDATIONS 75
A. CONCLUSIONS 75
B. RECOMMENDATIONS 76

LIST OF REFERENCES 77

INITIAL DISTRIBUTION LIST 79

LIST OF FIGURES

1. Graphic Description of the Organization of Study 7
2. Elements Affecting Sea Power according to Mahan 13
3. Components of Maritime Power, according to Hill 18
4. Geofrey Till Model of Sea Power 19
5. Kearsley's Components of Maritime Power 23
6. Factors that Influence the Development of Oceanpolitics according to Martinez 26
7. Relationship between Maritime Power and National Power 27
8. Colombian Model of Maritime Power 30
9. Colombia's Coast Lines and EEZ 32
10. Organizational Structure of Maritime Related Agencies in Colombian Government 51
11. The Star Model 60

LIST OF TABLES

1. Geographical and Physical Factors 33
2. Ocean Use 34
3. Fish Catches 35
4. Total Merchant Fleets 36
5. Oil Tankers Fleets 37
6. Ore And Bulk Carrier Fleets 37
7. Sea-Going Infrastructure 38
8. Maritime Schools 41
9. Selected Naval Power, Catagories 4 and 5 46
10. Maritime Power Comparison 47
11. Colombian Maritime Organization 64

GLOSSARY OF TERMS

MARITIME POWER: Maritime power is the ability of any nation to influence events at sea. All states with access to the sea have some form of maritime power. [Ref. 1, p. 30]. Maritime power, formerly known as 'sea power,' is a relative, not an absolute concept. It is relative to: other nation's maritime power, and to the nation itself at different points in time. Thus maritime power is a constantly moving framework.

MARITIMENESS: Infers substantial interests at sea (length and vulnerability of coast-line, productivity of coastal waters, and trade, both local and ocean-going) and potential to protect and promote national interests by sea. The degree or extent to which a nation's power and influence derives from the sea.

MODEL OF MARITIME POWER: A systemic method of presenting the interrelationship between the various components, or factors that affects any nation's maritime power.

MARITIME NATION: In this thesis, a nation is maritime, when its people perceive and use the sea as an important means of welfare. Their lives are highly interrelated with the maritime environment for issues like economic, social, political and cultural.

ACKNOWLEDGMENTS

The author wishes to give a special thanks to Professors Jan S. Breemer and Roger D. Evered for their professional, and knowledgeable guidance during the development of this thesis. Their experience, understanding and complimentary area of expertise were the key component in the completion of this document.

To Colonel Ernesto Carreño (Ret.) who happens to be a retired Colombian Naval Officer and my father-in-law I extend my thanks for helping me in collecting and finding sources of information in Colombia for this thesis.

A special thanks to Australian Navy Commodore Sam Bateman (Ret.) for his advice, support and information.

To my beautiful and beloved wife, María Patricia and my sons Juan José and Víctor Ernesto, all who inspired and motivated me. I thank them for supporting and accompanying me during my tour at Naval Postgraduate School and also thank them especially for their patience and support during the creation of this thesis.

Finally, I thank the Colombian Navy for giving me this opportunity to serve my country. I hope that this thesis may contribute to the Colombian Navy's development and growth.

I. INTRODUCTION

A. OBJECTIVE

This thesis analyzes Colombia's current level of maritime power and presents alternative strategies for the development of Colombia as a maritime nation. The study will address the following questions:

- Given that "all the states with a seacoast have some maritime power" [Ref. 1, p. 30], what would be an appropriate model for an integrated picture of Colombia's maritime power?
- Based on that model, what is the current level of maritime power in Colombia in relation to previous Colombian history. How does this compare with similar developing countries?
- Based on the current level of maritime power and considering different scenarios, what would be a feasible strategy for Colombia to pursue in order to become a maritime nation?

B. BACKGROUND AND IMPORTANCE

Colombia is situated in the northwest corner of South America. Even during Colombia's Spanish colonization, its location has had considerable Geostrategic importance. Colombia served as the primary gateway for commerce between the Caribbean and the continental landmass. Colombia's shores, with a total length of 2,900 km, are washed by two seas -- the Caribbean Sea and the Pacific Ocean. The country's territorial sea and Exclusive Economic Zone (EEZ) encompass a total of 880,376 square kilometers. This is equivalent to 77% of continental area with a total of 1,148,748 square kilometers.

Despite this large maritime "window" upon the world, Colombia has historically underutilized and under-protected its seas. One reason is that the case for a "maritime Colombia" has rarely, if ever, had a strong advocacy. Colombians, like Americans in the last century, have tended to look inward. Nevertheless, there has been a growth in national maritime consciousness in recent years. This development should not be exaggerated. The government policies favoring maritime development fluctuate. Although Colombia is aware of the importance of maritime resources, it has yet to commit sufficient efforts to fully exploit those resources. The question is still how should Colombia manage its maritime resources in such a way as to maximize opportunities offered by its surroundings. This is not just a Colombian matter. In fact, the United Nations General Assembly once proposed that all nations take the development and utilization of the seas and oceans as a strategy for human society's economic development [Ref. 2, p. 1].

In November 1995 a "Symposium of Colombian Maritime Power" was held in Cartagena. The event was organized by the Colombian Navy, specifically the Colombian Naval Academy. The event involved participation by representatives of many Colombian maritime interest groups, i.e., merchant marine, fishing industry, port operators and the Navy. The conclusions focused on three needs: first, to enhance the country's maritime culture; second, to create an advisory organism on maritime issues at the Presidential level; and third, which in this author's estimation is the most important conclusion, to formulate an "integrated maritime policy" for Colombia.

This thesis is written based on the Cartagena convocation and goals. This study seeks to provide an updated analysis of the comparative level of maritime power in Colombia. The final objective is to propose several possible solutions to

the problem of how Colombia may manage and maximize its maritime resources and realize its opportunities to exploit the wealth of the seas.

An integrated vision and policy of maritime power can offer a country possibilities for its development. The expression "potential uses of seas" involves various aspects, primarily economic. A maritime nation's economy relies on trade transported by sea involving merchant ships, harbor facilities, shipyards and other related activities. Exploitation of natural, mineral and energy resources are other important components of the economics and the potential uses of seas. Nations exploit the coastal and sea tourism industry and its related activities. The common beneficiary of all these activities are primarily that population directly involved in those maritime activities. A nation must exploit that potential in an efficient and orderly fashion. To exploit this potential, a nation must provide for two major ingredients, policies and regulations.

This thesis argues: First, that the Colombian Government does not have a general or clear vision of the existing potential of the use of seas. Therefore, Colombia has not developed appropriate policies in order to pursue use of seas. Second, the Colombian Navy as the leading organization in maritime issues in Colombia, must continue its role of enhancing maritime power. This thesis intends to serve as one step in the process of consolidating Colombia as a maritime nation.

It is important to recognize the primary security problem for Colombia in recent years is internal order. The components of this problem are subversion (guerrilla), and drug production and trafficking. These problems are associated with, and made more complex because of problems of social inequality, administrative corruption and inefficiency, and the lack of effective government presence. This is especially true in the poorer regions of Colombia.

Considering these complex problems this study seeks to offer the Colombian Government choices for solid economic development. The appropriate maritime vision and policy will enable Colombia to enhance the general welfare. Acquiring wealth from the sea and oceans would contribute to a diversification of the economy. Other countries, under similar conditions have produced positive and tangible results.

C. APPROACH AND METHODOLOGY

This study relies on modern concepts of maritime power for small and medium-size states to develop a national maritime model. This model is used to assess Colombia's relative maritime power and potential. The notion of maritime power for small and medium-size states requires some clarification. Most of the historical and theoretical literature on sea power is focused on the experience of the so called 'blue water' navies, i.e., the offensively oriented fleets of Japan and Europe's major powers before World War II, and since World War II, the superpowers, the United States and the Soviet Union. In the last 15 years it has been recognized that this model has little relationship to the experience and needs of small and medium-size nations. This is especially true in the developing world. This recognition is reflected in a small number of recent books. This literature focuses on the roles, missions and requirements of what are perhaps best called "contiguous sea" navies. Also highlighted is the fact that maritime power involves more than warships, but encompasses as the full spectrum of commercial activities associated with the sea and its resources.

This study is a critical analysis of Colombia's status as a maritime power. The study's purpose is to propose possible strategies for the development of Colombia as a maritime nation based on modern theories of maritime power. In fact

methodological study and analysis of maritime power in Colombia is relatively recent. There are few Colombian maritime authors, therefore this thesis uses documentation for similar developing countries in its examination.

The methodology of the study starts with the presentation of a theoretical basis for the development of a quantitative and comparative analysis of maritime power factors in Colombia. This analysis is performed in an objective way, based on documents and available data. Comparison of maritime power factors in Colombia with similar factors in other developing countries provides the means for a relative measurement. A parallel step in this process is the organizational analysis of all maritime related agencies of these countries. This analysis present Colombia's current structural organization for the exploitation of maritime resources, including its strengths and weaknesses. After the analytical and comparative methodologies are performed a proposal of possible strategies for the development of Colombia's maritimeness is presented.

D. ORGANIZATION OF STUDY

The following is a summary of the topics covered in this thesis and how they are organized to provide the answers to the research questions. Chapter II presents a theoretical frame of reference for analyzing the evolution of the concept of maritime power. The theories of Alfred T. Mahan and his contemporary J. S. Corbett serve as initial reference points to review the evolution of maritime power concepts in this century. Although these concepts are very useful, there have been many important events in this century, political, economic and technological, that require updating these basic concepts of maritime power. There are several authors with a variety of theories about maritime power. Based on those theories, this study attempts to apply these theories to the specific case of Colombia and its current level of maritime power.

theories about maritime power. Based on those theories, this study attempts to apply these theories to the specific case of Colombia and its current level of maritime power.

Chapter III presents the application of those theoretical bases and concepts to the actual situation in Colombia. Each component of maritime power is analyzed in a methodological and objective way, using palpable means of measurement. This analysis starts with a historical record of the evolution of each component, followed by the description and measurement of facts. Those facts are compared to similar ones in other developing countries with equivalent levels of development. Another aspect covered by this analysis is the actual future plans and projections (if they exist) of the Colombian Government.

Chapter IV is an organizational analysis of all maritime related agencies in Colombia. Those agencies belong structurally and administratively to various ministries, and perform different functions related to the management of maritime resources. This type of "diversified" bureaucracy without a single organism or head that can provide an overall picture of a balanced and sustained maritime administration is considered by the author as one of the significant obstacles to the development of Colombia's maritime strategy.

Chapter V presents a proposal of strategy for the development of maritime power in Colombia. This proposal is based on the analysis, changes of last twenty years, current reality and expected future of Colombia. These proposals support the concepts of national maritime interests and maritime power.

Figure 1 presents the flow of ideas in this study, beginning with the research questions and ending with the conclusions and recommendations.

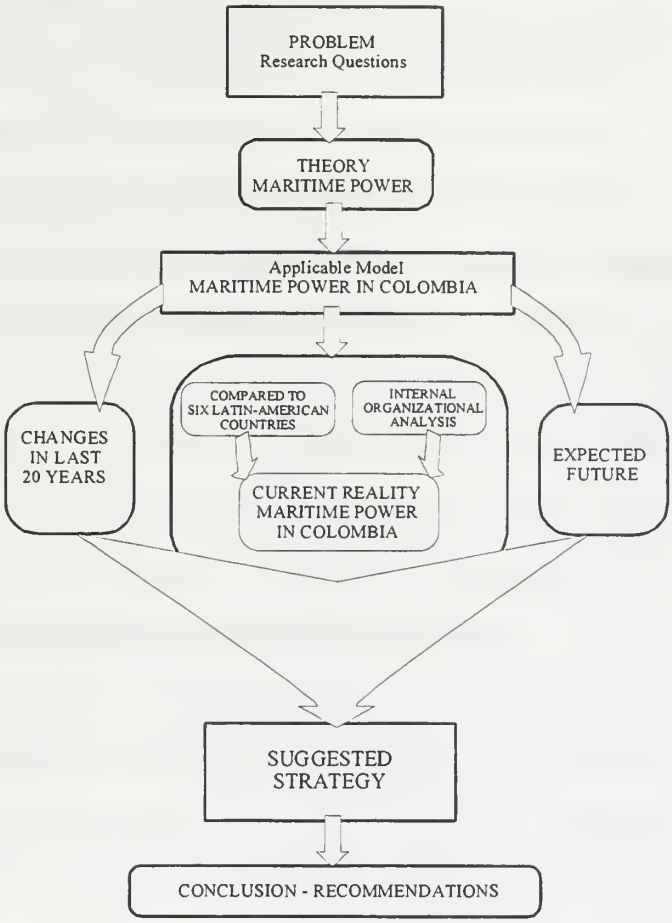

Figure 1. Graphic Description of the Organization of Study

E. LIMITATIONS OF STUDY

Although there are several publications addressing maritime power, most are focused on nations with the highest maritime standards. Some authors attempt to address medium maritime power, but even this often leaves Colombia outside the scope of the analysis. There is very little analytical information of maritime issues of countries with the lower levels of maritime power.

Little has been written in Colombia about the general issue of maritime power. There are some documents and books addressing specific components of

maritime power such as the Navy, the Merchant Marine and the ocean sciences and research. There is no material that addresses maritime power in general as a single study.

The success of this study is subject to the actual feasibility and applicability of suggested strategies and may only be measured after the implementation of those strategies for the development of maritime power in Colombia.

II. THEORIES OF MARITIME POWER

The concept of "maritime power," sometimes referred as "sea power," has evolved during the last century. The efforts of authors like Alfred Mahan and Julian Corbett, whose research has presented a clearer vision of the importance of the seas in the history of the world. They are also references from the last generation of authors of similar topics, among which are J. R. Hill [Ref. 1], Geoffrey Till [Ref. 3], Michael Morris [Ref. 4], Harold Kearsley [Ref. 5] and Chilean Admiral Jorge Martinez [Ref. 6]. This chapter presents an overview of the concepts offered by the most known authors in this topic of maritime power. There is special emphasis on the classification of the components of maritime power.

The idea behind the subdivision or classification of maritime power into components or elements is an attempt to present this concept as a model. This model permits a better understanding of the reasons that a nation becomes a maritime power, and why other nations do not make attempts to use the potential of the seas. The number and types of components of maritime power vary with different authors. Some authors call these components: "elements," "factors" or "sources." Others refer to them as "components," or some researchers present similar ideas in "input/output" models. By analyzing those concepts and classifications, this author seeks to find one model that best fits a developing country with considerable maritime resources, but with a low level of exploitation. Specifically, a model that is for the case of Colombia. With such a model, Colombia could "measure" itself, or compared itself with similar countries. Most importantly, Colombia could set future maritime goals.

The expression “maritime power” is sometimes seen with suspicious connotations, i.e., a country is seeking to dominate other," [Ref. 7]. This connotation is not the main objective of this thesis. Rather, the objective is to present an

integrated vision of all maritime related activities, with corresponding input to a country's maritime power.

At stake is the management of maritime activities which requires a maritime policy, based upon a maritime strategy. The final output of this management is a specific level of maritime power, comparable to other countries' level of maritime power.

A. ALFRED T. MAHAN (1880)

In 1880, Mahan wrote a book entitled, *The Influence of Sea Power Upon History 1660-1783*. Mahan is considered one of the fathers of modern maritime strategy and his work is a mandatory reference for anyone who wishes to study maritime strategy and maritime power. According to Mahan, the principal conditions or elements affecting the sea power of nations may be enumerated as follows:

1. Natural Conditions

a. Geographical Position

> If a nation be so situated that it is neither forced to defend itself by land nor induced to seek extension of its territory by way of the land, it has, by the very unity of its aim directed upon the sea, an advantage as compared with a people one of whose boundaries is continental.... The geographical position may be such as of itself to promote a concentration, or to necessitate a dispersion of naval forces..... It may not only favor the concentration of its forces, but give further strategic advantage of a central position and a good base for hostile operations against its probable enemies. [Ref. 8, pp. 29-30]

b. Physical Conformation

> The seaboard of a country is one of its frontiers; and the easier the access offered by the frontier to the region beyond, in this case the sea, the greater will be the tendency of a people to intercourse with the rest of the world by it. If a country be imagined having a long

seaboard, but entirely without a harbor, such a country can have no sea trade of its own, no shipping, no navy. [Ref. 8, p. 35]

c. Extent of Territory

As regards the development of sea power, it is not the total number of square miles which a country contains, but the length of its coast-line and the character of its harbors that are to be considered. As to these it is to be said that, the geographical and physical conditions being the same, extent of sea-coast is a source of strength or weakness according to the population is large or small. [Ref. 8, p. 43]

2. Characteristics of its Population

a. Number of Population

It has been said that in respects of dimensions, it is not merely the number of square miles, but the extent and character of the sea-coast that is to be considered with reference to sea power; and so, in point of population, it is not only the grand total, but the number following the sea, or at least ready available for employment on ship-board and for the creation of naval material, that must be counted. [Ref. 8, pp. 44-45]

b. National Character (Character of the People)

If sea power be really based upon a peaceful and extensive commerce, aptitude for commercial pursuits must be a distinguishing feature of the nations that have at one time or another been great upon the sea. History almost without exceptions affirms that this is true. Save the Romans, there is no marked instance to the contrary. [Ref. 8, p. 50]

c. Character and Policy of Governments

Particular forms of government with their accompanying institutions, and the character of rulers at one time or another, have exercised a very marked influence upon the development of sea power. The various traits of a country and its people which have so far been considered constitute the natural characteristics with which a

> nation, like a man, begins its career; the conduct of the government in turn corresponds to the exercise of the intelligent will-power, which, according as it is wise, energetic and persevering, or the reverse, causes success or failure in a man's life or nation's history. It would seem probable that a government in full accord with the natural bias of its people would most successfully advance its growth in every respect; and, in the matter of sea power, the most brilliant successes have followed where there has been intelligent direction by a government fully imbued with the spirit of the people and conscious of its true general bent. Such a government is most certainly secured when the will of the people, or their best natural exponents, has some large share in making it; but such free governments have sometimes fallen short, while on the other hand despotic power, wielded with judgment and consistency, has created at times a great sea commerce and a brilliant navy with greater directness that can be reached by the slower processes of a free people. The difficulty in the latter case is to ensure the perseverance after the death of a particular despot. [Ref. 8, pp. 58-59]

According to Mahan, the elements cited above, affect favorably or unfavorably, on the growth of national sea power. Figure 2 presents a graphic adaptation of Mahan's model.

3. Context of Mahan's Theory

Although still an important reference for the study and analysis of sea power, circumstances at that time of Mahan's writings must be considered. By 1880 the countries of Europe had reach a point in their industrialization where they believed that colonies were required for raw materials and markets.

At that point, there were many countries that had already established colonies, such as France, Spain, Portugal, The Netherlands and England. However, there were some other newer world powers like Japan, Italy and the United States who now found themselves willing to acquire colonies and all the things that colonies could give to their economies.

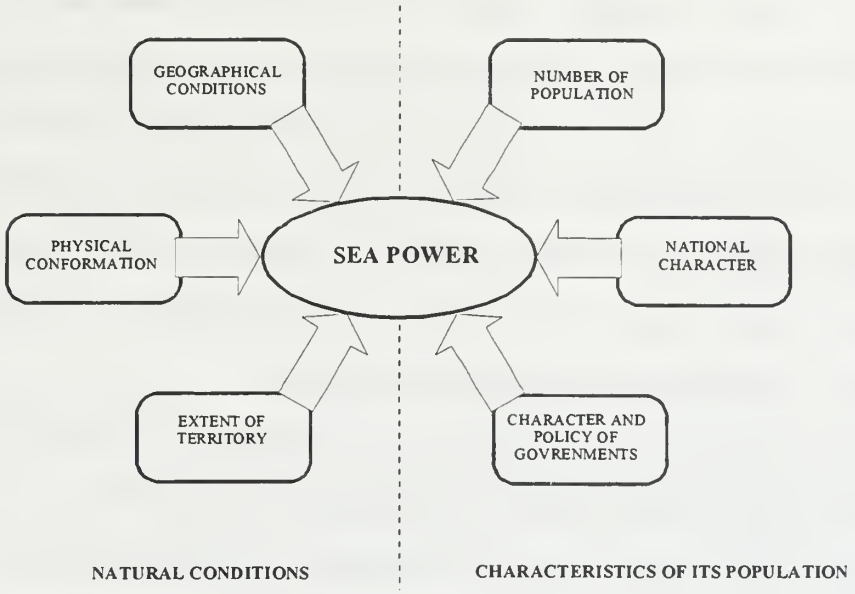

Figure 2. Elements Affecting Sea Power according to Mahan

One of Mahan's important references was Hobson's work, *Imperialism* [Ref. 9], published in the 1890s, which indicated that at some stage of economic development a nation is going to find that it must be able to project its power beyond its borders in order to secure raw materials and markets [Ref. 9, pp. 76-79]. In other words, capitalist countries will constantly be forced to expand. At some point, that expansion requires that these countries act overseas. In order to act overseas, they must develop a naval and a maritime force.

After several historical studies of navies, naval leaders, and battles, Mahan addressed the place of sea power as an element of a nation's power. For Mahan, sea power was a vital and necessary means of maintaining economic power. The maintenance of economic power would be very important in terms of political and social stability. If a nation wishes to maintain itself it must continue to expand, and it must expand overseas.

Mahan argued that if a nation wishes to develop sea power, it must develop a maritime system. This requires first, a naval force that can protect the country's shipping offensively and defensively. Sea power requires a merchant marine, and ships to carry goods. Third, a nation requires what were then referred to as "coaling stations," or in modern terms a forward presence where ships may put into port, and be repaired, fueled, etc. Finally, a nation requires a grand strategy, and some concept of how its naval forces will be used to obtain the resources that are necessary to expand that nation's power domestically.

The nation must have leadership that understands the economic and political as well as military requirements of maritime strategy. Since Mahan's era, maritime strategy has been a strategy that involves projection over the seas; that is, projection of force and projection of the economy.

For this study there are many applicable concepts, such as the description of conditions affecting the sea power of nations. But there are also marked differences from Mahan's era especially in uses of the seas and international relations. The law of the strongest is in some way still applicable, but international laws and organizations make it impossible to acquiring colonies for raw materials and markets for the finished goods.

B. JULIAN STAFFORD CORBETT (1911)

This British strategist was Mahan's contemporary. His best work is *Some Principles of Maritime Strategy,* published in 1911. Although Corbett's focus was issues of war strategy, he offered important concepts related to maritime strategy. His theory of naval war was subdivided in three parts: a) theory of the object -Command of the sea- ; b) theory of the means -the constitution of fleets-; and c)

theory of the method -concentration and dispersal of force. One of the core concepts was related to "command of the sea." For Corbett the definition was:

> ..means nothing but the control of maritime communications, whether for commercial or military purposes. [Ref. 10, p. 80]

The aspects of his theory of the means and theory of the object are more related to naval military strategy than with a strategy that considers other factors like economic, political and social factors.

C. J. R. HILL (1968)

J.R. Hill, a retired British Naval Officer book, *Maritime Strategy for Medium Powers* was published in 1968. Hill's objective was to classify states according to their level of maritime power. Hill argued that:

> ...power is a diverse and often unquantifiable thing,

Also he argued that

> ...it is not illogical to begin with the economic factors like gross domestic product and per capita income, in order to classify states. [Ref. 1, p. 14]

According to economic indicators of the time he classified states as: super powers, medium powers, and small powers. This work is primarily directed to medium powers and maritime strategy. Hill focused on the components of maritime power. The following are the components of maritime power presented by J. R. Hill with a brief explanation.

1. Trade and Access

> The possession by a state of a flourishing seaborne trade, of access to routes and markets, is a very important element of economic power. Analysis of published data about seaborne trade, indicates that the majority of the world's "top 30" economies seaborne exports make up over 10 percent of the national income. This in itself is a very

> significant contribution to the economy, but as a motor for domestic economic power and a catalyst for development and modernization it is even more important. [Ref. 1, p. 30]

In regards to the merchant marine, under a national flag and nationally owned, Hill argues that this view has been subject to challenge for nearly 50 years. This is a consequence of the globalization of economy and the competition among shipping companies, that has reduced freight and operation costs, bringing as a natural consequence the closure of many other companies. [Ref. 1, p. 35]

An ocean going merchant marine is, for Hill, an excellent example of the dichotomy of maritime power and vulnerability. It possesses all the virtues claimed for it -- it generally earns foreign exchange, it lessens dependence, it is a medium for access, and it is valuable in an emergency. Yet a merchant marine can be unprofitable in domestic terms, can absorb valuable national resources and produce little in immediate return, and also may be a hostage to unfriendly powers. [Ref. 1, p. 32]

> Cabotage, is far a more domestic element as a state's economy. Its effects on state power in peace time are indirect; if it is efficient, it may release resources for external manifestations of power. In time of conflict it may be vulnerable in a way that some states would find embarrassingly sensitive. [Ref. 1, p. 32]

Another important factor within this component is access to markets.

> This is a product of many factors like ideological congruity, ease of language communications; price and quality of the goods to offer, ease of customs and health rules; effectiveness of trade missions. [Ref. 1, p. 33]

2. Shipbuilding Industry

A national shipbuilding industry used to be regarded as an essential component of maritime power. Shipbuilding capacity was generally considered a vast financial asset in peace and a necessity in war.

During the 1950s and 1960s, there was a radical shift in the world shipbuilding pattern and far more fluidity in procurement. It is now, less critical for states to have an exclusive own shipbuilding industry and therefore the influence of this factor in a state's maritime power. [Ref. 1, p. 33]

3. Exploitation of Natural Resources

Exploitation of resources is an element of maritime power. Both living and non-living resources can, in certain cases, enormously add to a state's economic power. The power of resource exploitation, then, is ultimately economic. But the other kinds of power impinge upon it. First, exploitation often depends on an advanced technological base. Intellectual power is therefore important if a state is to develop its own resources. Second, the ownership of certain resources may become a matter of disputes between states and it will require other forms of power like legal and diplomatic. Finally, the protection and preservation of resources will entail some constabulary function of which the ultimate sanction must be military power. [Ref. 1, p. 33, 34]

4. Military Power at Sea

Safeguarding offshore resources and those who exploit them is in essence a direct and uncomplicated business, but it can be expensive and intricate in practice; while the protection and, it may be, fostering of trade and access is a process that generally involves a subtle intermingling of military power with many other components. But maritime power can be provided for purposes other than safeguarding trade and resources. These purposes are in the broadest sense political, involving as they generally do the maintenance or enhancement of the state's position in the world. [Ref. 1, p. 35]

Figure 3 presents a graphic explanation of Hill's model. It shows the four determined factors and their direct influence on a nation's maritime power.

D. GEOFREY TILL (1984)

Geofrey Till work, *Maritime Strategy and the Nuclear Age,* published in 1984, delīneates the factors which compose sea power in a form similar to an

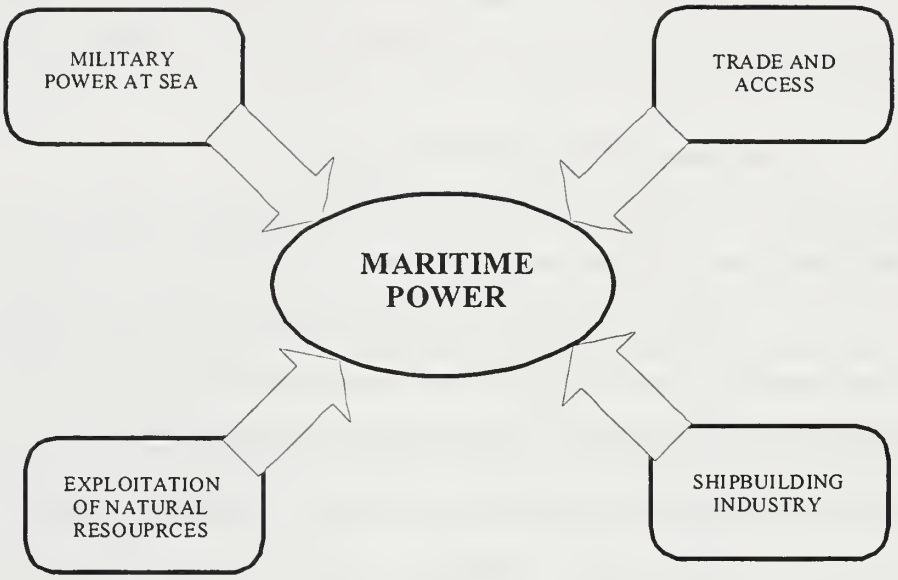

Figure 3. Components of Maritime Power, according to Hill

input/output model, where output is sea power. Till clearly defines the difference between sources and elements of sea power. The sources are composed of a maritime community, national resources, appropriate forms of government and geographical considerations. Those sources lead to more immediate elements of sea power: merchant shipping, bases, and fighting instruments.

Till basically enhances the ideas presented by Mahan, and arranges them in the form of a model of sources and elements of sea power (See Figure 4). He also emphasizes in the fact that:

> ...over time, the form these constituents take and their importance relative to each other, may change considerably. [Ref. 3, p. 75]

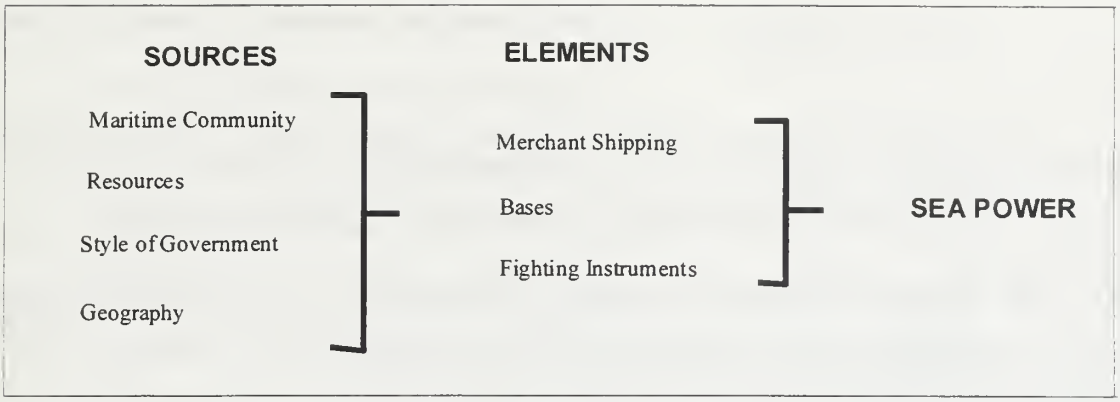

Figure 4. Geofrey Till Model of Sea Power

From this concept we see that components of sea or maritime power are always there, and the form, interaction and specific weight of those constituents is at any point in time a static situation.

E. MICHAEL A. MORRIS (1987)

Michael Morris' work, *Expansion of Third-World Navies* published in 1987, focuses on naval power rather than maritime power. The purpose of his study was:

> ...to develop and apply a methodology - the Third-World naval hierarchy - for analyzing the implications of the spread of maritime weapons systems in the Third World. [Ref. 4, p. 2]

Morris classified Third World navies into six categories:

1. Token navies. These are navies with minimal capacity and no aviation capacity at all. These navies are unable to effectively patrol their own territorial seas and are completely impotent in their EEZ. Examples are: Guatemala, Suriname Guyana. [Ref. 4, p. 33]

2. Constabulary navies. These navies possess some capability in their own coastal waters but are generally dedicated to constabulary functions. Examples are: Guinea-Bissau, Guinea. [Ref. 4, pp. 33-38]

3. Inshore territorial defense navies. These navies possess the ability to defend their territorial waters and have some capability of offshore

defense. Examples are: Cuba Dominican Republic, Uruguay, Ecuador. [Ref. 4, p. 39,40]

4. Offshore territorial defense navies. These navies have considerable offshore capability and are able to be effective to the limits of their EEZ. Examples are: Venezuela, Colombia, Mexico. [Ref. 4, pp. 40-44]

5. Adjacent force projection navies. These navies have extensive capabilities in their territorial waters and offshore well beyond the limits of their EEZ. Examples are: Peru, Chile. [Ref. 4, pp. 44-47]

6. Regional force projection navies. These navies have regional influence and a limited ability to project force in the adjoining ocean basins. Examples are: Brazil, Argentina. [Ref. 4, pp. 47-49]

He found eight indicators that related "strongly" to a navy's relative ranking:

1. Size of population
2. Land area
3. Off-shore oil production
4. Size of GNP
5. Size of armed forces
6. Domestic weapons industry
7. Licensed production of weapons
8. Level of naval industry

He found that a further six indicators had a "significant" relationship:

1. Size of EEZ
2. Volume of fish catch
3. Defense expenditure as a percent of GNP
4. Armed forces to population ratio

5. Size of national arms trade

6. Various aspects of naval weaponry

In his study, Morris performed four successive classification stages. These stages took into account both quantitative and qualitative considerations. The first stage established an initial ranking based on number and size of naval units. This first classification was refined at the second stage by the use of qualitative criteria. The two final stages introduced additional criteria related to the land-based and sea-based support of the fleet. The third stage included tonnage, naval aviation, marines, separate coast guard organizations and production of naval weaponry. The fourth and last classification stage looked for indications as to the states having a sufficiently large and diversified national power base to sustain the navy at particular levels.

This study, although focused primarily on naval issues, is an important reference for this thesis because it considers key and relevant aspects of sea related issues for developing countries, specifically in the area of Latin America.

F. HAROLD J. KEARSLEY (1992)

In his book *Maritime Power and the Twenty-First Century* [Ref. 5], published in 1992, Kearsley attempts:

> ...to build a theory of maritime power that is not tailored to any group of states but is based on their overarching needs. [Ref. 5, p. xiii]

He wrote:

> The intent is to provide a more reliable and complete understanding of the relationship between the casual factors of maritime power and the exercising of that power. [Ref. 5, p. xiii]

This model of inputs/outputs can be used to analyze the interrelationship between the components of maritime power (inputs) and the final missions (outputs). This approach has been presented on other occasions, but in this case the author considers it:

> ...entirely justified to isolate the military maritime component as an output and realign all other factors in the input side of the equation. [Ref. 5, p. 114]

Another modification is that:

> ...the factors under "processing filters" are vague and not easily codified. Some of the elements that make up these filters, such us type of government..., might be better placed in the "inputs' column. [Ref. 5, p. 114]

Thus, this is a model where naval power is the output or consequence of all the other factors of maritime power acting as the input or driver factors. This model can be useful to analyze the reasons why a nation decides to build up a navy, and why it conducts naval operations the way it does. In this model, the naval component is a function of all other components of maritime power. The composition of a Navy and its missions are based upon all other components of maritime power.

Once again, this model is not the purpose of this thesis, but it is an updated model that can further study in the area of the management of maritime resources. specifically in the use of force in the maritime environment. A representation of the simple input/output model of Kearsley is shown in Figure 5.

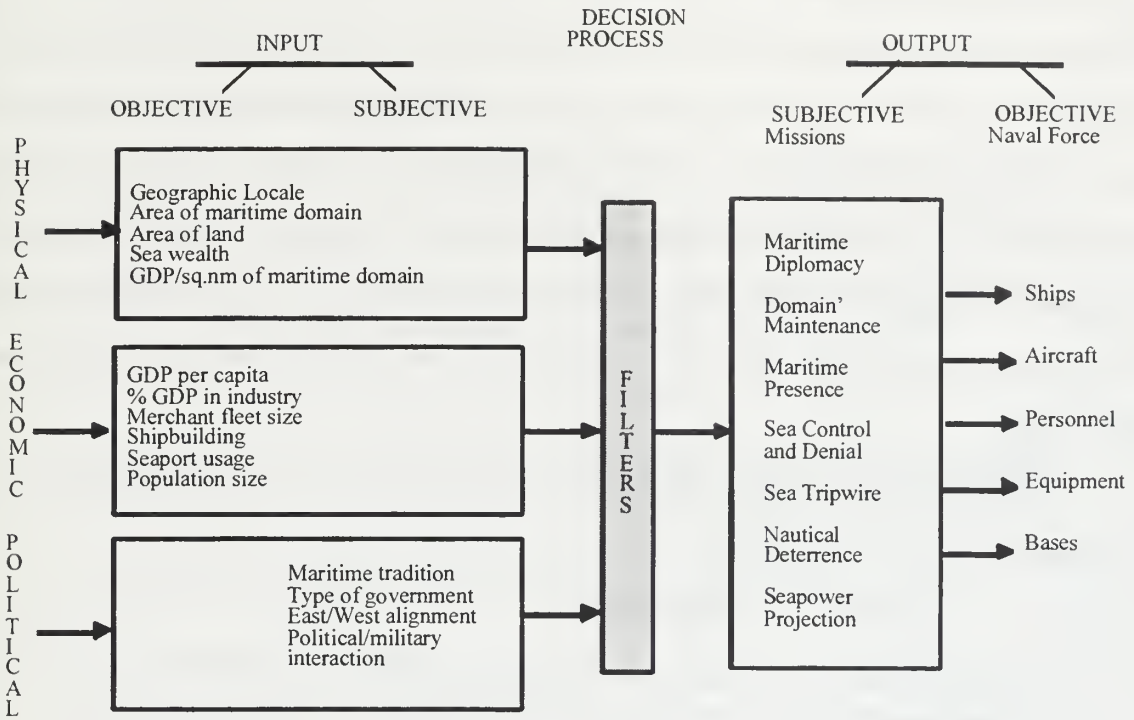

Figure 5. Kearsley's Components of Maritime Power

G. ADM. JORGE MARTINEZ (1993)

Chilean Navy Admiral, Jorge Martinez Busch in his presentation on the occasion of "the month of the sea" in Chile, 1993, introduced the concept of "Oceanopolítica" or Oceanpolitics, and its importance for the development of his country. The main purpose of Oceanpolitics is:

> ...to make that the political institutions and their actions, appreciate the influence of the sea in the vital cycle of the state. [Ref. 6, p. 8]

Martinez argues that:

> ...there is plain conceptual harmony between Oceanpolitics and Geopolitics, including the three main elements that represent the object of its political study. [Ref. 6, p. 8]

In the context of all previous theories or concepts of maritime power, there is in Martinez' presentation an intention of selling the idea of the importance of the sea to his fellow citizens. This is more than just as a global strategy for the development of a world power. This seems to be the perspective that most, if not all, developing countries try to give to their maritime development. However, those concepts and aspirations represents some form of regional influence in order to ensure their existence as a sovereign nation and to protect all the potential resources that the sea may offer.

Martinez considered seven factors that influence the development of Oceanpolitics.

1. Maritime Transportation

This first factor, that has made profitable all kinds of exchange with no limitation of distance and to a worldwide level, has contributed to give shape to the present interdependence that modern society offers before the globalization of its economic ties. [Ref. 6, p. 11]

2. Source of Food

This second factor is related with the linkage of oceanic spaces as a source of human and animal food by means of fishery. It gives shape to an activity that currently results indispensable for their survival. [Ref. 6, p. 11]

3. Energetic Resources

This third factor is determined by the value of the existent energetic resources in the oceanic spaces and the littoral, such as hydrocarbons and gas, as well as the use of sea's kinetic energy to transform it in electric energy using the force of the waves, tides and thermic and salt gradients. [Ref. 6, p. 11]

4. Mineral Resources

The fourth factor is given by the wealth of the mineral deposits contained in oceanic spaces, which participation in raw materials

market will replace terrestrial mining, once this last reserve come to its end. [Ref. 6, p. 11]

5. Regulatory Factors

The fifth factor is of regulatory order. It is composed by the International Maritime Law in permanent evolution, aiming always for the proper coexistence of human community and guarantees the exercise of freedom of the seas and juridical equity of the states in order to make possible its access to its wealth. [Ref. 6, p. 12]

6. Scientific-Technological Capabilities

The sixth factor is related with the scientific-technological capabilities of nations for the development of sea sciences, due to its direct relationship with the management and exploitation of maritime resources and the knowledge of the environment. [Ref. 6, p. 12]

7. Politico-Strategist

The seventh and last factor is of politico-strategist order, due to security matters and its potential military use implicit in an international society in plain transformation, process that began with the end of W.W.II and has permitted the creation of a new group of coastal states. [Ref. 6, p. 12]

In his paper "Oceanpolitics in the Development of Chile," Adm. Martinez analyzes "Oceanpolitics adversities in Contemporary Chile." His results are proposals for future approaches for the development of Chile and its projection toward the Pacific Ocean. Martinez's paper is relevant to the development of this thesis. The paper is a well documented paper and has applicability, and more importantly, is written for a country with very similar conditions to that of Colombia.

Martinez' oceanpolitics model is shown in Figure 6.

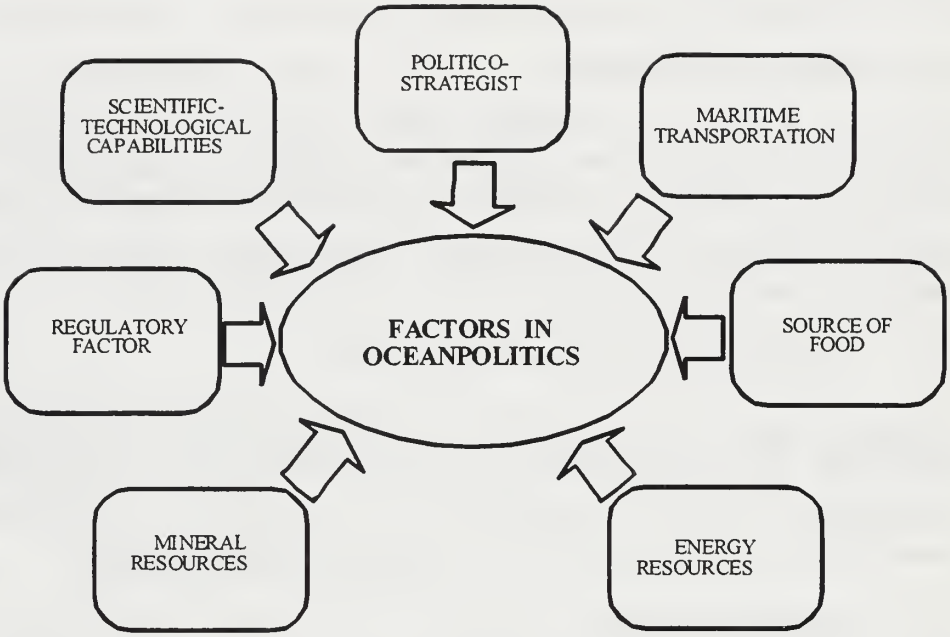

Figure 6. Factors that Influence the Development of Oceanpolitics according to Martinez

H. MARITIME POWER IN COLOMBIA

1. Maritime Power and Fields of National Power

There are different approaches and basic coincidences, about what model should be used for the analysis of maritime power in any specific country. For the purpose of this study, i.e., the Colombian case, the first step is to establish the relationship between "national means of power" and "maritime power." The latest version of this relationship in Colombia was presented by Colombian navy Vice Admiral Edgar Romero in the document "Analysis of the Context of Maritime Power in Colombia and the Caribbean" where he stated that:

> ...Maritime Power can be referred to as an expression of National Power and at the same time is the resultant of the integration of means

from the political, economic, psycho social and military fields. [Ref. 11, p. 5] See Figure 7.

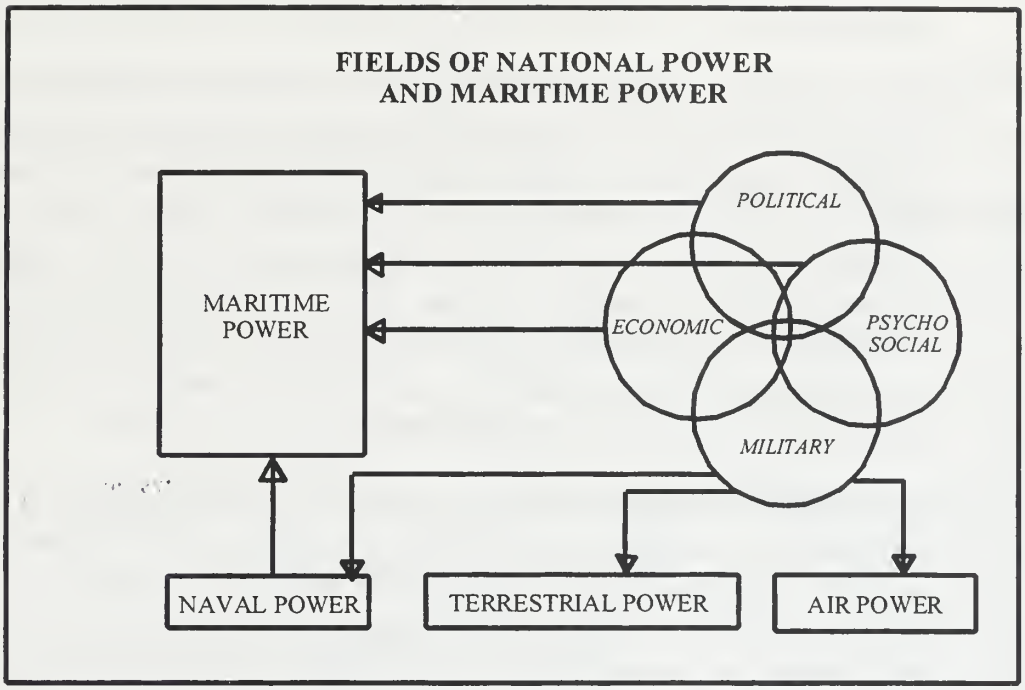

Figure 7. Relationship between Maritime Power and National Power

This statement is very important in understanding and gaining a general picture of the importance of maritime power and the interaction with "all" areas of national power.

2. Proposed Model for Maritime Power

From that perspective, and giving the relevance to the maritime component of a nation's power, and the different approaches to maritime power, this study presents the following observations of a model of maritime power that may be applicable to Colombia:

1. Maritime power is the ability of any nation to influence events at sea in order to reach the projected maritime objectives. Maritime power is the product of the development of all maritime related activities and their interaction. Those activities are promoted and supported by a national

maritime policy, and are conditioned by national and international legal and environmental regulations. Simultaneously those activities can be boosted by the use of adequate science and technology and the efficient management of the human resources.

2. The basis for maritime development is given by the physical and geographical features of a nation. That includes geographical position and physical characteristics like length and conformation of coastlines, extension of EEZ, conformation of soil, subsoil and all oceanographic features within a nations waters. Those are the available means and resources that the nation can use for its own advantage with the consequent development in maritime power. However, all international waters, almost with no restriction, are available maritime resources for any nation who wants and can exploit them.

3. The multiplicity of uses that any country can and wants to give to the sea, are going to be decisive factors affecting maritime power for that specific country. Those activities are multiple in potential but in the Colombian case, they are few in reality. The potential on the use of seas varies from basic maritime transportation up until maritime defense, passing trough fishery and mining, and several more. Those are going to be denominated uses/resources of the oceans according with the classification presented by Aldo Chircop in his paper "Competing Demands for Ocean Use" [Ref. 12] in June 1993. Chapter III presents details about this classification. There is a very closed relationship between resources/uses and the sea-going infrastructure. This infrastructure is related to port facilities, naval industry, and all maritime related industry and infrastructure.

4. Naval power is the guarantee or insurance of any nations maritime power. Naval power defends a nation's sovereignty from external enemies, and ensures safety in all maritime activities. At this point in history, where geographical position, physical boundaries and EEZ have been internationally recognized, it is very common to fall in the assumption that these factors are fixed or almost unchangeable and therefore, a nation does not require of a particular and special attention for defense purposes. Sovereignty is any nation's interest number one. Sovereignty at sea is not less than sovereignty at land. Defense and safety are vital interests of a nation-state.

It is important to note that this approach requires a "systemic view" of the constant interaction of all factors. A systemic view implies cooperation among factors/entities rather than competition.

In summary, there are six key factors that affect any nation's maritime power. Those factors can affect, favorably or unfavorably, the growth of maritime power in nations. This seems a simple statement, but the statement has connotation of variability. In other words: those factor are not static. Factors can have a growth for the country's benefit or can be reduced disadvantage. These factors are:

1. Geographical and physical features
2. Uses/resources of the oceans and sea-going infrastructure
3. Science & technology and human resources
4. Judicial and environmental regulations
5. Maritime Policy and Management
6. Naval Power (Defense and Security)

This model however, shows only a list of components with valuable explanation of their importance, and that there is some kind of interaction between these components. If the objective is to determine what is the "specific weight" for each component, relative to the final output of "maritime power," then this will require accurate and detailed data. If the objective is to assess, the level of maritime power of a specific country, at specific point in time, compared to other countries, or with the country own history, it would be necessary to consider all the measurable factors of maritime power. This will be done in Chapter III. Figure 8 is the proposed model of Colombian maritime power.

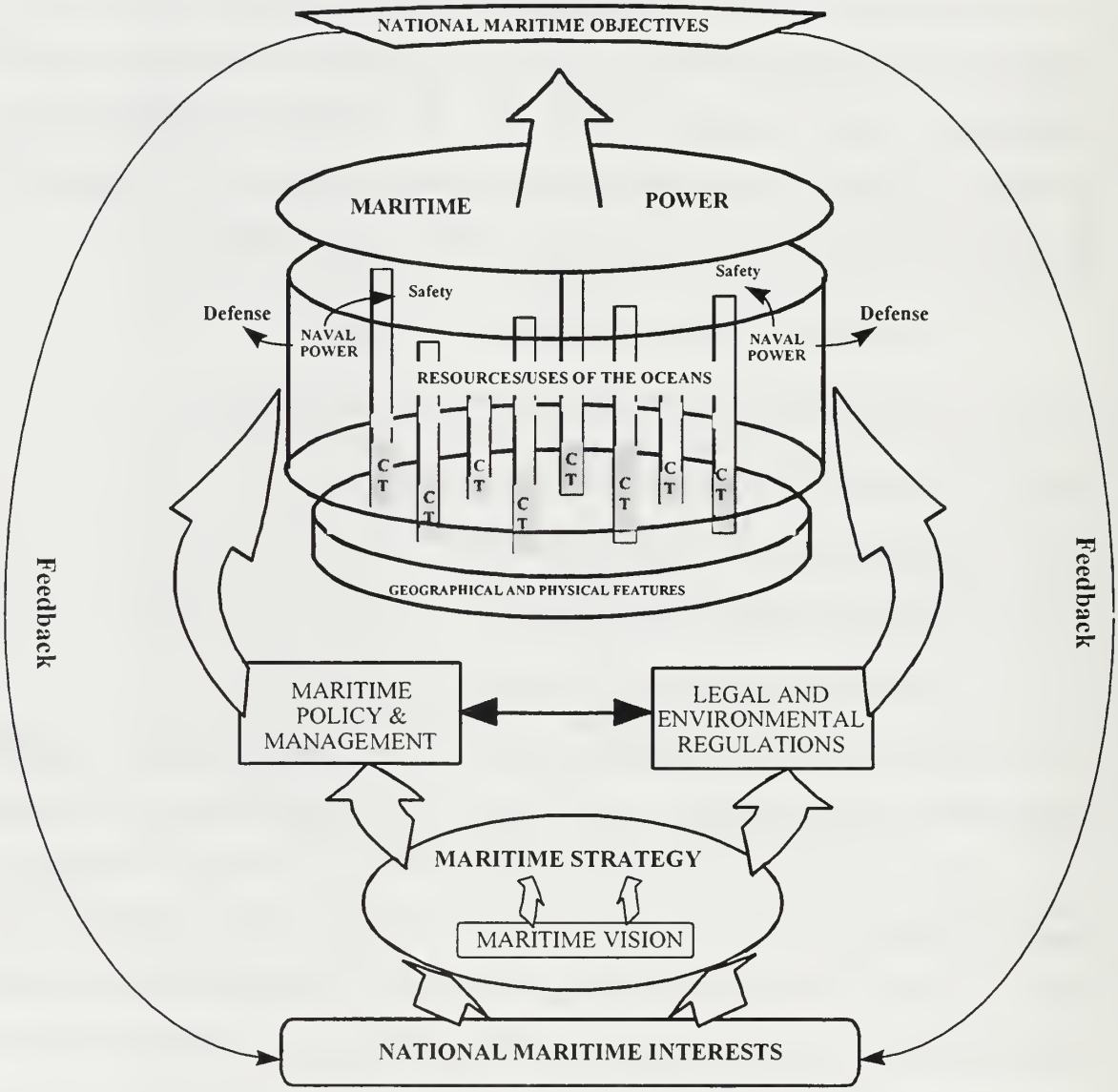

Figure 8. Colombian Model of Maritime Power

III. MARITIME POWER FACTORS IN COLOMBIA COMPARED TO OTHER LATIN-AMERICAN COUNTRIES

> Most states use the sea. Of over 150 members of the United Nations, under 30 are landlocked (Switzerland is not a member of the United Nations: that makes one more) And there appears to be no instance of a state which possesses a sea coast ignoring the fact. However minimally, some of its people will apply the resources of the sea to their environment. Thus, if power is the ability to influence events, all states with a seacoast have some maritime power. [Ref. 3, p. 30]

This Chapter presents and analyzes the components of maritime power in Colombia, and compares them with other Latin-American countries. As concluded in Chapter II, there are six basic factors affecting maritime power. Those are:

1. Geographical and physical features
2. Uses/resources of the oceans and sea-going infrastructure
3. Science & technology and human resources
4. Judicial and environmental regulations
5. Maritime Policy and Management
6. Naval Power (Defense and Security)

Based on these factors, and the available information, the study will compare each of them and their sub-components with the following six other Latin American countries: Argentina, Chile, Ecuador, Mexico, Peru, and Venezuela. These countries were chosen because of their similar characteristics, economic performance, degree of general development, but most importantly because of the similitude in situations and problems related with the management of maritime resources.

A. GEOGRAPHICAL AND PHYSICAL FEATURES

This factor is considered by all authors of maritime issues, as the material basis and essential requirement for the presence of any maritime power. This factor encompasses geographical position of a country relative to other countries: coast line extension, maritime extension and volume including their EEZ, soil and subsoil under this maritime extension. Other physical features include oceanographic characteristics that determine the presence of resources.

Figure 9 shows Colombia's coast lines along the Caribbean Sea and the Pacific Ocean as well as the internationally recognized EEZ based on the Law of the Sea Treaty.

Figure 9. Colombia's Coast Lines and EEZ

It is important to point out that approximately 75% of the world oceans are international waters, where resources are available to any nation who wishes to

exploit them. This is an enormous potential and currently there are several nations with extractive activities in those oceanic spaces. It is up to the Colombians' leadership to determine when and how to exploit those resources for the nation's benefit and welfare.

Table 1 shows coastline extension, EEZ and land extension of Colombia and the six selected countries.

Table 1. Geographical and Physical Factors

COUNTRY	COAST LINE Km	EEZ Sq. Km	LAND EXTENSION	EEZ/LAND RATIO
COLOMBIA	2,900	880,376	1,138,914	0.77
ARGENTINA	4,989	1,161,939	2,780,400	0.42
CHILE	6,425	3,490,175	756,626	4.61
ECUADOR	2,237	1,156,805	283,561	4.08
MEXICO	9,330	2,845,808	1,958,201	1.45
PERU	2,414	785,122	1,285,216	0.60
VENEZUELA	2,800	580,000	912,050	0.63

Of these seven countries, Colombia is the fourth largest in territory, the fourth longest coast line, and has the fifth largest EEZ.

B. RESOURCES/USES OF THE OCEANS

This factor includes all resources that humankind can extract from the maritime environment and the uses that people have for the oceans, up to this point in history. This study presents detailed data on the known resources and uses of the oceans, as an initial reference and for future and continued tracking and analysis of those activities in Colombia. It is useful to observe the dimension of the potential of resources and uses that the sea offers. The following classification was presented by Aldo Chircop in his paper "Competing Demands for Ocean Use" [Ref. 12] in June 1993:

Table 2. Ocean Use

Resources

Extractive

Living

Hunting: Fishing, Mammals, Birds, Biological sampling, Illicit uses
Gathering
Farming: Aquaculture, Mariculture.

Non-living.

Mineral: Oil & Gas, Deep sea mining, Tunneling, Pumping, Dredging, Solute extraction
Water: Desalinization, Deep water
Energy: Tidal, Wave, OTEC, Current, Wind, Geothermal
Spatial: Dredging, Land reclaim, Tunnels, Bridges, Causeways, Dams, Channels, Habitats
Cultural: Treasury hunting, Archaeology, Specimen collection

Non-extractive

Living

Acoustic surveys
Marine Parks
Seafaris
Photography
Submarine Excursions
Underwater cabin

Non-living

Prospecting
Exploration
Seismic survey

Cultural

Archaeology

Non-resources (Uses)

Transport
Vessel.
Pipeline.
Ferry.
Cable cars.
Amphibian.
Communication
Vessel.
Submarine cable.
Electrical acoustic.
Ice-breaking.
Surveying
Hydrographic
Seismic.
Acoustic.
Wastes
Vessel.
LBS.
Dumping.
Atmosphere.
Recreation
Tourism.
Boating.
Cruising.
Diving.
Snorkeling.
Surfing.
Aquaplaning.
Skiing.
Others.
Military: Defense and Security
Piracy
Salvage
Marine Search and Rescue

This list is long, and not all those activities are applicable to Colombia. However, in order to determine the extent of those resources/uses in the Colombian case, and to compare them with countries similar to Colombia, this study analyzes the two most common activities: Fishing (Fish Catches) and maritime transportation (Merchant Shipping Fleets).

1. Fish Catches

This indicator shows how many tons of fish are caught (and reported) by each of the countries. Table 3 shows annual fish catches by the selected countries from 1988 until 1992.

Table 3. Fish Catches
(All fishing areas: Thousand metric Tons.)

COUNTRY	1988	1989	1990	1991	1992
COLOMBIA	89.1	98.3	128.0	109.2	158.9
ARGENTINA	493.4	486.6	555.6	640.6	705.3
CHILE	5209.9	6454.2	5195.4	6002.8	6501.8
ECUADOR	876.0	739.9	391.2	384.1	347.1
MEXICO	1372.6	1469.9	1400.9	1453.3	1247.6
PERU	6641.7	6853.8	6875.1	6949.4	6842.7
VENEZUELA	285.5	328.9	331.9	351.7	320.6

Peru and Chile have the highest fishing activity. There is no doubt that Colombia is the country with the lowest level of fish exploitation. What is positive in the Colombian case, is the trend of the last five years.

From the productivity stand point, the Colombian situation is not very positive:

> Colombia is ranked 116 of 133 nations with fishing registrations. It has a participation of 0.20%, and an extraction of 28.12% of its estimated potential. [Ref. 13, p. 88].

A summary of the Colombian situation in fishing matters was presented by Armando Hernandez in his paper "La Industria Pesquera en Colombia" [Ref. 14]. He stated that:

...by analyzing the development of the Colombian fishing industry during the last 25 years, and considering the available fishing potentials, it would be possible to assert that its growth has been relatively slow, and its contribution to the national economy very low. [Ref. 14, p. 94]

2. Merchant Shipping Fleets

According to several authors, this is no longer a positive indicator about the "importance" that a country gives to its economy in terms of maritime transportation. Importance is determined by the percentage of national and international trade transported by maritime means. An indicator is how much of the domestic productivity is related to port activities, shipyards and similar services. Unfortunately such data are not available.

The available data is related to the size of the merchant shipping fleets registered in every country. This date does not reflect number of ships (units) or ownership.

Table 4 presents the total merchant shipping fleets registered in the selected countries from 1988 to 1993. Table 5 and 6 indicate what part of the total merchant fleets is dedicated to Oil and Ore & Bulk transportation respectively.

Table 4. Total Merchant Fleets

(Thousand GRT)

COUNTRY	1988	1989	1990	1991	1992	1993
COLOMBIA	412	379	371	313	250	238
ARGENTINA	1877	1833	1890	1709	873	773
CHILE	604	590	616	619	580	624
ECUADOR	428	402	385	384	348	286
MEXICO	1448	1388	1320	1196	1114	1125
PERU	675	638	617	605	433	411
VENEZUELA	982	1087	935	970	871	971

Table 5. Oil Tankers Fleets

(Thousand GRT)

COUNTRY	1988	1989	1990	1991	1992	1993
COLOMBIA	14	14	14	11	6	6
ARGENTINA	586	543	568	542	221	107
CHILE	19	28	26	26	4	4
ECUADOR	159	120	120	116	112	75
MEXICO	522	533	507	507	479	478
PERU	197	197	190	177	131	131
VENEZUELA	463	463	463	478	455	437

Table 6. Ore And Bulk Carrier Fleets

(Thousand GRT)

COUNTRY	1988	1989	1990	1991	1992	1993
COLOMBIA	92	81	81	81	63	63
ARGENTINA	465	459	502	365	62	62
CHILE	320	295	296	296	279	297
ECUADOR	22	22	27	27	22	22
MEXICO	271	226	178	48	...	...
PERU	134	129	129	129	64	49
VENEZUELA	109	157	147	147	96	147

What is important and can be deducted from these tables other than the comparative size of fleets, is the trends during the last six years. With regard to the total fleet size, Colombia has the smallest fleet compared with the other six countries. In regards of the trends, Colombia shows a clear pattern of downsizing during the six years shown. Although it is not included on the tables, at the end of 1996, the largest Colombian merchant fleet, 'Flota Mercante Grancolombiana' (FMG) merged in joint venture with a Mexican shipping company. This last event seen the sunset of one of the largest Latin-American shipping companies.

3. Sea-going Infrastructure

This factor is comprised of port facilities, shipyards, and industrial infrastructure related to maritime activities. Sea-going infrastructure may not be

physically located in coastal areas. Infrastructure also includes maritime related industry located inland, such us boat building, fish processing, and naval machinery industry in general. In order to compare Infrastructure with other countries, the selected factors are port facilities and shipyards. Table 7 shows the number of ports and shipyards for each of the countries, according with the 1996-1997 edition of *Fairplay - World Shipping Directory*. [Ref. 15]

Table 7. Sea-Going Infrastructure

COUNTRY	PORTS Major	PORTS Minor	SHIPYARDS
COLOMBIA	5	5	01
ARGENTINA	7	21	10
CHILE	10	20	05
ECUADOR	3	11	02
MEXICO	9	20	04
PERU	7	20	02
VENEZUELA	9	17	02

Except for the smaller number of ports in Ecuador, Colombia has the smallest number of ports and shipyards. Of special attention is the number and quality of shipyards in Colombia. According to the analysis presented by Colombian Navy Vice-admiral Edgar Romero during the Symposium of Maritime Power in Colombia:

> ...this element, indicator of maritime power is precarious in Colombia, compared with other South-American countries like Argentina, Brazil and Chile. Neither is representative in the Caribbean area if compared with Venezuela, Cuba and Panama. [Ref. 11, p. 80]

As a matter of fact, the Colombian shipyard shown in this table, CONASTIL, is currently out of service because of financial problems.

The number of ports in Colombia, is small compared with other countries. However, on the Caribbean coast, there is a proportional and convenient distribution of ports. Another positive in Colombia is with the privatization process of maritime

ports, that started in 1990, their efficiency has improved rapidly, and there is a promising future in the short term.

C. SCIENCE & TECHNOLOGY

This factor is considered as the "booster" of any of the uses/resources of the oceans. The resources are there, but how efficiently a nation exploits them is directly related to the level of science and technology development and applied to any specific activity.

On 14 May 1969, Presidential Decree 763, created the Colombian Commission of Oceanography (CCO) as a permanent organ for advisory and consultancy of the national government in oceanographic matters and its related scientific and technological disciplines. The main objective of the decree was to coordinate the efforts of the scientific marine community, so as to integrate them with the programs for national development and international cooperation. After 28 years existence of the CCO, the results of its work on the balance is positive. There is in Colombia a solid and structured marine research policy. Colombia is internationally updated and integrated in the area of marine sciences. One of the reasons for success is the existence, since its creation, is a decisive and concrete policy and the will of the national decision makers. This support is the blood and fuel for this advisory/research agency. The Navy has been key actor in this program, supporting with human resources, ships, education and investigation centers, and general resources. However, this research structure is focused on the oceanographic, hydrographic and marine sciences aspect. Research, science and technology in naval engineering, design and construction is very incipient. Proof that this focus does not exist is that the case that naval construction in Colombia is limited to few small fishing boats, tugboats and barges.

1. Human Resources

> Training and education are essential to the development and application of knowledge on the maritime environment and its resources. [UNESCO report, 1988]

The human resources factor refers to the people involved in maritime related activities. Before any maritime activity, there are people, and these people require some degree of skills to perform those activities. Besides the quantity of people, education and training are key factors in the solid development of the human resources. Any nation with a coherent maritime policy, executes educational programs based on specific plans in order to reach specific objectives and considering that nation's long term projections. The Colombian case is quite different: creation of maritime educational centers, have been consequence of eventual circumstances more that a planned action. Clear proof of this was the creation of the Colombian Naval Academy. During the last century it was created and recreated three times and after a few years was closed again. Fortunately, the last attempt in 1935 was successful and the Naval Academy has since been an excellent Colombian maritime educational center.

The diversification and specialization of maritime activities in Colombia have increased during the last two decades. This is because of national policies of economic liberalization. But Colombia lacks a diversification of educational centers. These centers are reduced the Officers Naval Academy, Enlisted Naval School, Jorge Tadeo Lozano College with its specialty in Marine Biology, and the Nautical School for fishing in Cartagena. Based on the data supplied by *Fairplay World Shipping Directory 1996-1997* [Ref. 15], Table 8 shows the number of educational centers or institutes related to maritime issues in the seven countries selected.

Table 8. Maritime Schools

COUNTRY	SCHOOLS
COLOMBIA	01
ARGENTINA	02
CHILE	02
ECUADOR	02
MEXICO	03
PERU	02
VENEZUELA	03

D. JUDICIAL AND ENVIRONMENTAL REGULATIONS

This is the regulatory and conditioning factor that includes: International Conventions and Treaties, and National Legal and Environmental regulations. Those are the framework under which any maritime activity must be carried out in order to have an organized and disciplined use of the oceans. The foundation of this framework is: respect for others' rights, respect for nature and the environment and the environment's preservation for future generations.

Colombia is internationally up-to-date in regards of treaties, conventions and agreements. The following, is a chronology of international maritime treaties signed by Colombia, according with information supplied by the Maritime Authority (Direccion General Maritima) DIMAR-SEASI:

- 1974 Convention for the constitution of World Maritime Organization. Enacted by Laws 06/74 and 45/87.
- 1982 International Convention for ships ARQUEO, 'TONNAGE/69'.
- 1981 International Convention for Security of Human Life at Sea 'SOLAS 74/78. Enacted by Law 08/80.
- 1983/8 International Convention for the prevention of marine pollution from vessels. 'MARPOL 73/78'.
- 1981 International Convention for the prevention of collisions at sea. 'COLREG/72'. Enacted by Law 13/81.

- 1984 International Convention for establishing norms concerned with training, entitlement, and watch of marine people. 'STCW/78'. Enacted by Law 35/81.

- 1987 Constitutive Convention and Agreement for exploitation of the International Organization of Maritime Satellite Telecommunications. 'INMARSAT/76'. Enacted by Law 08/86.

- 1987 International Convention of Load Lines. 'LL/66'. Enacted by Law 03/87.

- 1990 International Convention of Civilian Responsibility for damages as consequence of marine pollution by hydrocarbons. 'CLC 69/76'. Enacted by Law 55/89.

- 1991 Convention for the Facilitation of International Maritime Traffic. 'FAL/65'. Enacted by Law 17/91.

Colombia has signed several international treaties, but not all have been converted into detailed regulations and law. To accomplish this requires further efforts to fully integrate those treaties into the day-to-day management and execution of maritime activities. At the national level, each of the government maritime agencies, has regulations for activities under its responsibility.

Comparing this factor with the other six countries, it is possible to state that there is no marked difference between them (except for Venezuela) in the sense that all other Latin-American countries considered in this thesis are subscribers to the United Nations Law of the Sea Treaty and its conventions. It is important to understand that countries like Chile and Peru have led the initiative on international agreements, specifically in the determination of a EEZ within the 200 nm off the country's coasts and fishing rights and protection regulations. This is indeed, a clear indicator of the importance that those nation-states give to the seas.

E. MARITIME POLICY AND MANAGEMENT

This is a core factor in the development of any nation's maritime power. Maritime policy:

> ...can be defined as that framework of decisions that plan or map out an integrated national program for uses of the sea. [Ref. 16, p. 73]

The policy involves all the objectives, policies, and decisions at the national level, that affects directly the evolution of maritime power. In the Colombian case, maritime policy has been characterized as un-integrated and erratic. There are many micro-policies that deal with components of national uses of the sea, but the integrating of whole is lacking in Colombia. This is primarily because of a lack of maritime vision and national maritime strategy from the leadership. By analyzing maritime history in Colombia, it is possible to conclude that only during critical moments or because of sporadic visionary leaders, the nation has taken decisive actions to enhance its maritime power.

> The basic problem is the fact that currently, marine affairs are not at the top of the public policy agenda, neither do they capture sustained public attention, with the exception of environmental disasters or accidents at sea. [Ref. 17, p. 159]

Based on research and personal experiences of international naval officers, currently at the Naval Postgraduate School, this study has established that there is a wide variety of maritime organizational structure as well as maritime policies among their countries. To compare the maritime policies of these countries will fall in subjectivity because there is no best policy. Policies can be evaluated in terms of implementation and finally in terms of measurable results.

However, there are common factors in matters related to marine policy and management, and specifically related with its difficulties. According to the paper "Integrated Marine Policies: Goals and Constraints" authored by Stella Maris Vallejo

in the book *Ocean Management in Global Change*, [Ref. 17], there are two main problems related with traditional Ocean Policy Systems: Structural problems and Procedural problems. Structural problems deals with:

> ...the low political structure given to marine affairs within the governmental structure. [Ref. 17, p. 160]

and the multiplicity of agencies in charge of maritime related activities.

> Thus, marine-related policies are formulated and implemented on a sectorial basis without interagency consultation, and therefore are not structured within an overall perspective of marine development priorities.... Further constraints are added by ad/hoc crisis response approaches in policy making and implementation. The result are marine policies and associated activities many times motivated by short-term objectives which in the long run may even be counter productive to the nation's interests. [Ref. 17, p. 160]

Procedural problems deals with:

> ...the managerial and technical capability of national institutions to undertake new and expanded functions. Unfortunately, traditional sector-oriented management approaches prevail, since most countries do not have the knowledge and experience of applying the concept of integrated ocean management. [Ref. 17, p. 161]

Another procedural problem is that:

> ...there is a lack of, or insufficient, information and knowledge of the coastal and ocean systems and the complex process therein, necessary to take decisions concerning the use and the conservation of resources, and the protection of the marine environment. Maris final argument is that "the majority of countries lack the human resources having the skills and knowledge necessary to formulate and implement and integrated marine policy, which is a complex process that deals with competing and often conflicting uses and values, and where social and political issues frequently overshadow technical issues. [Ref. 17, p. 161]

The structural problem in the case of Colombia, is analyzed in detail in Chapter IV of this study.

F. NAVAL POWER

Chapter II has shown that the concept of maritime power has evolved from a militarily oriented idea to a more complex and diversified type of power. However, one constant of this evolution has been naval power. To describe the role of this military factor of maritime power, it is necessary to answer the question: Does Naval Power affect a nation's maritime power? The answer is positively "yes." Therefore, naval power is a factor that affects maritime power, and it is one of the most important, if not the most important, both in peacetime and wartime.

In the Colombian case, the Navy (naval power) has been without disagreement the core factor for the development of maritime power. In words of the most prestigious naval historian in Colombia, CN(r) Enrique Roman:

> ...fortunately for the country, and despite the lateness, from 61 years ago it (Colombia) counts with an institution that has been making turns to correct the secular abandoning of its seas: the National Navy, that with its formation centers for sailors, cadets and marines, its units at sea, and land installations, has taken the steering wheel with the objective of sailing safe in its extensive jurisdictional sea. [Ref. 18, p. 1]

Naval power has had an important role in Colombia's history. During the independence wars in 1810's and 1820's, naval forces were a key factors for the consolidation of the nation's sovereignty. The naval forces were also important during the Peruvian conflict in 1933-34. On the other hand, the lack of an adequate level of naval power was a decisive factor in the loss of the Panamanian isthmus in 1903.

Naval power is, without debate a very important factor for the development of maritime power in Colombia, and this same argument applies to the other six Latin-American countries in this study. However in order to compare or to rank naval power between the seven countries, there are several factors that must be considered. As stated initially, this study is not focused only on the naval aspect of naval power but on maritime power as a whole. Therefore, the comparative analysis of the naval component in this study is based in the book *Expansion of Third-world Navies* by Michael Morris [Ref. 4]. Morris ranked Argentina as Category 6 (Regional force projection navies), Chile and Peru as Category 5 (Adjacent force projection navies), Colombia, Mexico and Venezuela as Category 4 (Offshore territorial defense navies) and finally Ecuador as Category 3 (Inshore territorial defense navies). Selected Latin American Navies are shown Table 9.

Table 9. Selected Naval Power, Catagory 4 and 5

				Aircraft			Naval Production	
Latin American Navies	**Number of Vessels**	**Tonnage**	**Personnel**	**Helicopters**	**Recon**	**Combat**	**Indigenous Design**	**Other Production Design**
Argentina	103	111,300	35,000	19	12	11	Landing Ships	Destroyers, Frigates, Submarines, Patrol Boats
Peru	45	86,700	11,500	26	2	9	Auxiliary Ships	Frigates
Chile	34	73,500	24,000	30		19		

From Ref. [4]

G. GENERAL COMPARISON

To summarize material presented in this chapter, Table 10 is a general comparison of the level of maritime power between the six countries and Colombia. Countries were ranked from 1 to 7 in each of the factors, according to the comparative size or category with respect to the others. Category 1 corresponds to the largest and 7 to the smallest maritime power.

Table 10 illustrates that Colombia, one nation with largest capabilities has devoted less resources to the sea. Countries with less capacity, for example Chile, Ecuador, Peru, have devoted much more of their resources to maritime activities and as a result are positioned to receive much more in return. Colombia sets at the very bottom of the list in its potential development of maritime resources.

Table 10. Maritime Power Comparison

COUNTRY	EEZ	COAST EXT.	FISH CATCHES	MERCHANT FLEETS	SHIP-YARDS	PORTS	NAVAL POWER
COLOMBIA	5	4	7	7	7	6	3
ARGENTINA	3	3	4	3	1	4	1
CHILE	1	2	2	4	2	2	2
ECUADOR	4	7	5	6	6	7	4
MEXICO	2	1	3	1	3	3	3
PERU	6	6	1	5	4	4	2
VENEZUELA	7	5	6	2	4	1	3

IV. ROLES AND ORGANIZATION OF MARITIME RELATED AGENCIES IN COLOMBIA

The purposes of this chapter are these: first, to describe the missions and functions of all maritime related government agencies in Colombia, and second, to analyze the Colombian national maritime infrastructure in terms of concepts of organizational theory.

The management of maritime related resources in Colombia requires, as for any other national resources:

- Policies
- Legal support
- Defense and safety

Policies are promulgated by the executive branch, where all maritime related agencies are located. Pertinent legislation is promoted by those agencies, but its source is signed and converted into law by the legislative branch, which in the case of Colombia, is a bicameral Congress. Those laws are the legal support for government agencies so they may accomplish their objectives within a legal frame. The Defense and safety of national maritime resources are the responsibility of the Colombian Navy. Safety at sea is provided by the Colombian Navy through the Maritime Authority and the Coast Guard.

Although an all-encompassing Colombian maritime organization does not exist as such, this thesis analyzes maritime related agencies as if they are structurally related. *Webster's Dictionary* defines an organization as:

...an association or society of people working together to some end.

This definition applies to the Colombian, in the sense that there are agencies and people working with a similar national objective: maritime power.

Figure 10 presents the organizational chart of all maritime related agencies under the executive branch of the Colombian government.

A. ROLES AND MISSION OF MARITIME RELATED AGENCIES

Before analyzing the overall organizational structure of Colombia's maritime related agencies, this study presents a brief description of each agency's mission and tasks. Mission and tasks are the key to determining roles, lines of communication, and coordination established by law, as well as possible duplication of functions among agencies these agencies.

1. Colombian Commission of Oceanography

Structurally under the National Planning Department, the Colombian Commission of Oceanography (CCO) was created by Presidential Decree 763 on the 14 of May, 1969. It was conceived as a permanent organism for advisory and consultancy to the national government in oceanographic matters. The Commission's different scientific and technological disciplines have as their primary objective the coordination of the efforts of the scientific marine community, so as to integrate them into the programs for national development and international cooperation.

2. General Directory for Territorial Sovereignty

Under the Ministry of Foreign Affairs, and specifically the Vice-Ministry for America and Territorial Sovereignty, this agency is in charge of all aspects related to international maritime limits and frontiers, as well as any international affairs within Colombian jurisdictional waters. According to Law 2126 of 1993, the mission and

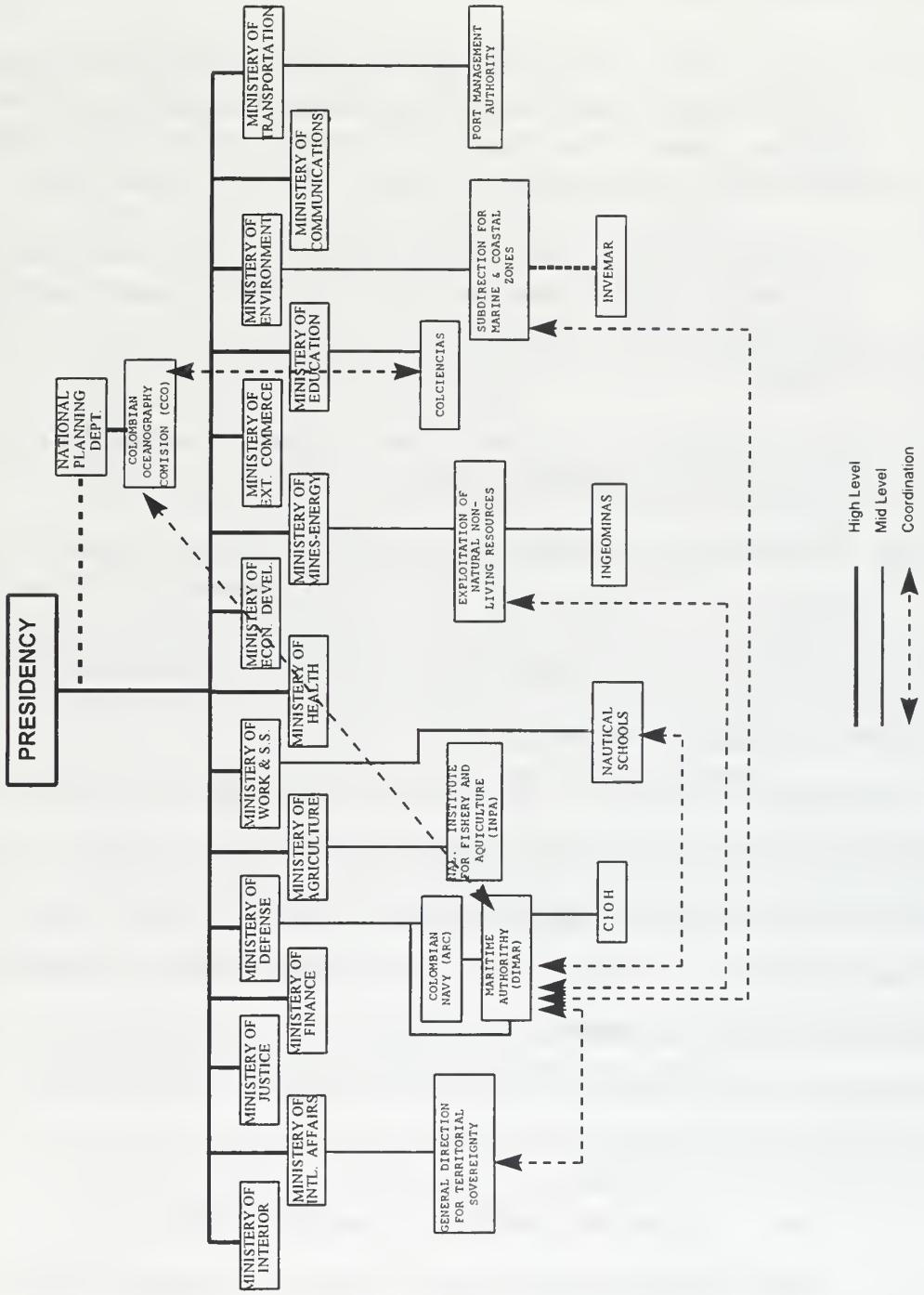

Figure 10. Organizational Structure of Maritime Related Agencies in Colombian Government

functions of the General Direction for Territorial Sovereignty is directly responsible for the following maritime issues:

- To present for consideration by the Vice-Minister for America and Territorial Sovereignty, the concern with the characterization of terrestrial frontiers as well as maritime and air sovereignty, and special affairs, as well as common hydrographic basins and river and frontier matters.

- To maintain contact with all official entities that work with matters related to frontier zones, to collaborate in the adoption of programs leading to the development of those areas, and to inform about this topic to the Vice-Minister.

- To participate in all the related bilateral commissions for the characterization of frontier limits.

- To participate in coordination with the maritime authority, National Ministry of Defense and all competent agencies, all the related exploitation of resources from the sea and the eventual infractions from vessels with foreign flag in areas of Colombian maritime domain.

3. Colombian Navy (A.R.C.)

Structurally dependent on the Ministry of Defense, the Colombian Navy (Armada Republica de Colombia), in conjunction with the units under its command and operational control, plans and executes on a permanent basis, naval, river and terrestrial operations, in its jurisdictional area, with the purpose of maintaining the national sovereignty, the validity of institutions, the territorial integrity and the constitutional order, contributing to the development of maritime power and the protection of national interests.

a. Colombian Maritime Authority (DIMAR)

Decree 2324/84 established the tasks of the Maritime Authority related to direction, coordination and control of maritime activities. The Maritime Authority is also responsible for the promotion and encouragement of national maritime

development of the nation. The following functions are the authority's responsibilities:

- Advise government in adopting policies and programs related to maritime activities and execute them within the limits of its jurisdiction.
- Direct, control and promote the development of the merchant marine, scientific research and adequate use of sea resources.
- Coordinate with the Navy the control of maritime traffic.
- Install and maintain aids to navigation, conduct hydrographic measures, and print the national nautical charts.
- Direct and control the general activities related to navigation safety, human safety at sea, maritime search and rescue, and determines the crew of merchant ships. Authorize operation of vessels and naval artifacts in Colombian waters.
- Authorize and control the acquisition, construction, repair, modification, maintenance, use, and scrapping of vessels and naval artifacts. Vessels planned for construction may be required to fulfill characteristics recommended by the navy for national security reasons.
- Authorize and control activities related with the arrival, mooring, maneuver, anchorage and departure of vessels and naval artifacts; conduct arrival inspections in Colombian ports to vessels and naval artifacts through harbor masters.
- Execute and control the inscription, registration, inspection, classification, licensing and patent of vessels and maritime artifacts.
- Encourage, authorize and supervise the organization and operation of ship yards, dock yards, work shops and installations that build, repair and maintain vessels and naval artifacts, register them.
- Authorize, register and control the professional activities of natural persons and juridical organizations dedicated to maritime activities and specially to those related to piloting, towage, maritime agents, retailers

of vessels and chartering, ports, stowage, dredge, classification, recognition, diving, rescue and maritime communications. Issue the corresponding licenses.

- Advise the government of regulation and control of the centers for development, education, training of maritime people, plans and programs. Register and issue professional licenses to the graduates; issue license to the naval surveyors in the different maritime activities and register them.

- Direct and control the activities related to international maritime transport, cabotage public or private; assign, modify or cancel sailing routes and determine the conditions for the usage of them.

- Authorize agreements, settlements and associations that Colombian shipowner's plan to realize, and cancel the authorization when, in the judgment of the Maritime Authority, the national interests is adversely affected.

- Authorize the rent or chartering of national or foreign vessels and naval artifacts.

- Approve the participation of Colombian shipowners' in maritime conferences and register their representation, codes, costs and freights.

- Authorize the costs of freight for cabotage and international maritime transport and the ticket prices for tourist passenger transport.

- Apply, coordinate, control and ensure the execution of national and international norms to preserve and protect maritime environment.

- Authorize and control nautical archeology and treasure hunting, and administer the contracts for extraction and recovery.

- Authorize and control the concessions and usage of waters, low water terrains, beaches and areas of a public domain in the jurisdiction.

- Regulate, authorize and control the construction and usage of artificial islands and structures en the jurisdictional areas.

- Determine the anchorage areas for vessels and maritime artifacts.

- Authorize and control the dredging works, refill and other oceans engineering works in the low tide zones, beaches and areas of public domains in the jurisdiction.

- Conduct investigations and sentence for violation of merchant marine norms, maritime accidents, violations to cargo reserve, contamination of the marine and fluvial environment in the jurisdiction, illegal constructions or unauthorized use of areas of public domains and terrains in the Maritime Authority jurisdiction and for violation of other regulatory norms of maritime activities. Impose the correspondent sanctions.

- Advise the Government on international agreements, conventions and treaties in maritime topics, supervise their execution.

- Develop activities and programs related to the objective and end of the Maritime Authority Organization.

4. National Institute for Fishery and Aquaculture (INPA)

This agency is structurally located under the Ministry of Agriculture, and specifically under the Sub-direction for Fishing Production. The National Institute for Fishery and Aquaculture (Instituto Nacional de Pesca y Acuicultura), INPA, was created by Law 13 of 1990 and its regulatory decree. The Institute's primary functions are the execution, investigation, development, administration, regulation and control of fishing and aquaculture activities at a national level, as well as coordination of international technical cooperation activities. In addition, the INPA is in charge of inter-institutional coordination, promotion of encouragement for financing and commercialization of fishing resources. The creation of this agency was an attempt by the Colombian national government to develop fishery activities.

From 1960 until 1989, fishing activities were managed under the supervision of the INDERENA (National Institute for Natural Resources), and were largely supported by technical assistance from the Food and Agriculture Organization of the

United Nations, FAO. This cooperation was an important factor for the further development of maritime fishery in Colombia.

5. Exploitation of Non-living Resources

Under the Ministry of Mines and Energy, the Subdirectorate for Engineering, is responsible for the control and exploitation of natural non-living resources in all the national territory (including coasts and EEZ). Specific functions related to the maritime environment are included in Chapter XV of Decree 2655/88, articles 118, 119, 120, 121 and 122.

6. National Program for Marine Science and Technology

Under the Ministry of Education and specifically the Colombian Institute for the Development of Science and Technology "Francisco Jose de Caldas" COLCIENCIAS, (Instituto Colombiano para el Desarrollo de la Ciencia y Tecnología), the National Program for Marine Science and Technology is charged with incorporating science and technology in the development of the marine sector (environmental, aquacultural, fishing, tourist) in Colombia. This is in order to make possible the design and execution of plans, programs, policies. Technological packages, technically supported is directed to an optimal organization, that may conserve and sustain utilization of marine resources and environment. Toward this organizational objective, COLCIENCIAS is to engage all actors who participate in one way or other in the development of this sector: state, academic and research sector, private business sector and community in general.

Specific objectives are:

- Promote and stimulate scientific and technological activities in marine affairs so that they can be incorporated into the sustained development of the country in the mid- and long term.

- Integrate and articulate academic, government and business sectors at a national level with research in marine affairs, and identify specific ways to rationalize and optimize institutional efforts for the acquisition and utilization of human, logistic, and financial resources.

- Reinforce the structure and the human resources for the development of marine related science and technology.

- Support the publishing of research results, both to the civil society and the national and international scientific community.

- Support the development of marine scientific information services.

7. General Directory for the Physical Environment

This agency works under the Ministry of Environment. The specific agency in charge of maritime environment is called the Sub-directorate for Marine and Coastal Zones. Its mission, according to decree 1868 from August 1994, is the following:

1. To propose general rules toward the conservation, preservation, use, and management of the environment and renewable natural resources in the marine and coastal zones.

2. To coordinate, through the office of Investigation and Environmental Technology, the activities of all entities involved in research of the marine environment, its living resources, and coasts and beaches.

3. To coordinate, in common agreement with the Ministry of Agriculture, and develop, based on the best scientific evidence and statistical information available, studies for the determination of species and stocks of fish available in adjacent waters. With this reference, the INPA (National Institute for Fishing and Aquaculture) issues the licenses for catching.

4. To present a concept for the issuing of Environmental Licenses in the area of its competency.

5. To propose general criteria for the elaboration of projects to be developed by the CARS (Regional and Autonomous Corporations) and Territorial Entities in all aspects related with marine and coastal zones according with policies and criteria established about this matter.

6. All other within its preview that are assigned.

a. Institute for Marine and Coastal Research (INVEMAR)

INVEMAR is a scientific entity assigned and linked to the Ministry of Environment. Its main function includes:

Basic and applied environmental research of natural renewable resources and coastal and oceanic ecosystems on adjacent seas to the national territory. INVEMAR will issue technical concepts related to the conservation and sustainable utilization of marine resources, and will offer advise and scientific support to the Ministry, territorial entities and the Autonomous Regional Corporations.

The Ministry of Environment promote and is supposed to create a network of centers for marine research, where all similar entities can participate, looking for the rational utilization of all the scientific capability already available in that field.

8. Ports Management Superintendency

According to Law 01 of 1991, Article 3, the mission of the General Superintendent of Ports is: to define technical conditions for port operations; procedures for inspection; cargo handling, billing, storage and delivery; services to vessels; regulations about vessels arrival and departure; permanency periods; services use time; documentation; industrial safety and all other functions formerly performed by the Organization "Puertos de Colombia" recently closed. The objectives of the Superintendency are:

- To facilitate the surveillance of all operations carried out by port societies and port users.

- To guarantee the operations in ports at all time on every day of the year.
- To encourage efficiency improvements and the use of port installations.
- To introduce technological innovations in port activities.

B. ORGANIZATIONAL ANALYSIS

Before performing an organizational analysis, it is important to clarify, again, that an integrated Colombian maritime organization does not exist. There are several governmental agencies in charge of different maritime activities and there are some coordination channels established by law. The different agencies regularly act independently, and there is no common vision for them to pursue. As noted in Chapter III, the development of maritime power in Colombia, has been the product of circumstantial decisions, rather than a planned set of policies and objectives. However, there is an informal organization, in the sense that all agencies are working in a similar environment. Overall, they are all related by the common factors of the seas and coasts.

1. The Star Model

A useful model to analyze the Colombian maritime organization is "the star model." [Ref. 19, p. 1] This model basically considers and groups five main factors that mold or shape an organization. They are: strategy, structure, processes, a reward system, and people policies (human resources). All these factors are inter-related. This model shows that changes in one factor affect the entire system. Additionally, surrounding the entire organization and in many ways holding it together, is the organization's culture.

> Every organization develops distinctive beliefs and patterns over time. Many of these patterns and assumptions are unconscious or taken for granted. They are reflected in myths, fairy tales, stories, rituals, cerēmonies, and other symbolic forms. Managers who understand the

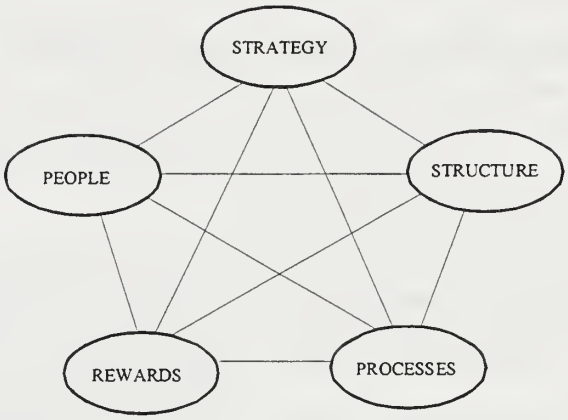

Figure 11. The Star Model

power of symbols have better chance of influencing their organizations than those who focus only in other frames. [Ref. 20, p. 258]

External to the organization, environmental factors are constantly presenting the organization with new challenges. These environmental factors, when the organization has no prior experience dealing with them, lead to environmental uncertainty.

The following are some of the characteristics of the current 'informal' Colombian maritime organization according to the star model:

a. Strategy

Strategy is commonly considered the most important factor for the success of any organization. Strategy determines direction. [Ref. 20, p. 11] Since there is no single, all-encompassing maritime organization in Colombia, there is no single or unified strategy to follow. Each agency has its own strategy. Although each agency is trying to do the best it can, it seems obvious that if there were a unified and shared national vision and strategy in the maritime arena, the results would be better

than they are currently. This factor is related to the need for an unified and integrated maritime policy at the national level.

While each ocean activity is promoted by well-meaning, hard-working and often zealous professionals, the net result, in the sense of the real national interest, often may be zero.

b. Structure

"Determines the location of decision-making power" [Ref. 20, p. 11]

- There is no joint or centralized agency in charged of promulgating and promoting an integrated Colombian maritime policy and management.
- All those agencies, except for the CCO, are structurally located in a lower level of a ministry. This is a negative factor and it is difficult to reach the level of national decision to promulgate or support a maritime policy.
- The highest structural level is for the Colombian Commission of Oceanography. This is an advisory and consultancy body to the Presidency of Colombia. Although is strategically located, its area of influence is scientific research. Despite its importance, this agency does not promulgate any integrated policy and does not deal with promotion or management of maritime related resources. There process duplicated in functions among agencies like INVEMAR and DIMAR/CIOH. It is important to establish an integrator body or agency. This agency needs to be located in the highest governmental level in order to "politically" influence the promotion of maritime activities.

c. Processes

Flow of information; they [processes] are the means of responding to information technologies. [Ref. 20, p. 11]

The "communications" factor among different agencies is of critical importance. There are specific activities of coordination regulated in each one of Colombia's maritime agencies. However, due to the lack of a centralized agency and

the natural sense of competition in the organizational environment, communications are restricted to the minimum required. There is no real sense of cooperation among agencies because of this lack of a single national maritime vision, uncertainties and sudden changes in the general national policy.

d. Reward Systems

> They [Reward Systems] influence the motivation of people to perform and address organizational goals. [Ref. 20, p. 11]

Other than the case of Navy and the maritime authority top management promotion is based on political influence.

e. People Policies (Human resources policies)

> They [People Policies] influence and frequently define the employee's mind-sets and skills. [Ref. 20, p. 11]

People involved in the management and execution of Colombian maritime related activities work in a similar environment. That is physically on the coasts or at sea. On the other hand, maritime related skills are specialized in regards to the environment, but people can work across different maritime activities almost without difficulty. Therefore, there exists a high probability that once people get involved in any maritime activity, they will stay in the same environment for long time and accumulate experiences. For example, a Naval Officer graduated from the naval school, may seek retirement after five years in the Navy. Then he works in a merchant shipping company for six years. After that, he works in a private port, and so on. This factor is a strength in the sense that people involved in maritime activities are long term employees and despite the change of employment, they are always accumulating experiences for the benefit of the Colombian maritime activities as a whole.

f. Organizational Culture

Considering all maritime related activities as a system, it can be concluded that there is not a single and unified organizational culture in the administration of maritime activities. There is a combination of military/scientific culture in the Navy and Maritime Authority, and a political/scientific culture in all other agencies.

According to survey performed by Colombian Navy CDR Ismael Idrobo in January/97, related to an organizational analysis of the maritime authority and Coast Guard:

> ...there is a generalized sense from the Colombian Naval Officers, that the politicians are trying take the maritime authority away from the navy, therefore threatening the importance and power that the Navy has thanks to the maritime authority. [Ref. 21]

During the research process, through telephone conversations with government officials, this author concluded that there is a generalized perception of a higher responsibility for DIMAR in regards of authority, authorization, and law enforcement issues.

Table 11 summarizes factors of organizational analysis in Colombia's maritime agencies.

Table 11. Colombian Maritime Organization
(Maritime Related Agencies)

STRATEGY	STRUCTURE	PROCESSES	REWARDS	PEOPLE	ORG.CULTURE
No Single Organization provides direction.	No joint or centralized agency responsible for an integrated maritime policy.	Because of a lack of a centralized agency, and the natural sense of competition in the organizational environment communications are restricted	Other than the case of Navy and the maritime authority top management promotion is based on political influence.	Maritime related skills may be used in many different maritime environments and people tend to make their work with the sea a lifetime commitment	There is not a single and unified organizational culture
No Unified or shared vision.	Most agencies are structurally at lower levels of ministries	No real cooperation among agencies because of the lack of a single national maritime vision and uncertainties and changes in the national policy		This commitment accumulates experience to the benefit of the Colombian maritime activities	There is a military/scientific culture in the Navy and Maritime Authority
No Unified or Integrated maritime policy at the national level.	Difficult to reach the level of national decision making				Other agencies have a political/scientific culture

V. PROPOSED STRATEGY FOR THE DEVELOPMENT OF COLOMBIA AS A MARITIME NATION

> Twenty years after the Stockholm Conference on the Human Environment and ten after the adoption of the United Nations Convention on the Law of the Sea (LOSC), the responses of countries regarding the formulation and implementation of an integrated national marine policy appear to be extremely slow. [Ref. 17, p. 153]

The objectives of this chapter are first, to determine Colombia's current reality in maritime issues; second, to present future scenarios for Colombia's maritime power, and finally, based on those two factors, to propose a strategy for the implementation of a likely scenario to promote the development of Colombia as a maritime nation.

A. CURRENT REALITY OF COLOMBIA'S MARITIME POWER

Based on analysis performed in Chapters III and IV the following statements indicate the current reality of Colombia's maritime power and management of maritime related issues.

- Compared to Argentina, Chile, Ecuador, Mexico, Peru and Venezuela, Colombia has the lowest level of maritime power, primarily due to the low usage of oceans resources by both the government and private investors.
- Colombia's national interests are more focused on inland issues than maritime issues. Subversion, drug trafficking and social inequality are top issues in the political agenda. Oceans are not perceived as vital, or as an important source of national wealth and development.
- There is no integrated Colombian maritime policy at a any level of the national government.

- Structurally, there are several government agencies dealing with maritime issues, but there is no shared vision nor joint objectives. Competition among agencies is predominant over cooperation or cohesion.

- There is very low level of maritime consciousness in the Colombian people. Large and medium size cities are far from the coast except for Barranquilla, Santa Marta and Cartagena on the Caribbean coast. The Pacific coast is practically abandoned. Although the coasts are important generators of culture and folklore, Colombia does not identify its culture and folklore as maritime.

- Private investment in maritime activities is very low in Colombia. Erratic policies and scarce support from government are the main reasons for this problem. Government investments in maritime activities are also erratic, lacking long term objectives or vision.

- The bankrupt shipyard, CONASTIL, leaves Colombia without the capability of maintaining its Naval Forces and the additional problem that private maritime maintenance must be performed outside Colombia. The result of this is that the technical and industrial infrastructure for shipbuilding and maintenance in Colombia is shrinking.

- With the merger of FMG, Colombia no longer may control its own shipping. In many countries the merchant marine is subsidized by the government to meet that government's perceived defense needs. This is not done in Colombia and may leave Colombia at a disadvantage economically.

B. CHANGES IN LAST TWENTY YEARS

In Colombia, over the last twenty years, economic growth has increased at a steady rate. With this growth has come an increase in maritime activities.

1. New Environmental Tasks

New requirements for the protection of the environment have generated a new Ministry of Environment. Subdirectorates specifically responsible for coastal

marine environments were created to address these areas. These duties were previously performed by maritime authority but under that agency these environmental requirements were only one task of many and did not receive the focus that the new agencies are able to apply. Additionally, with individual agencies assigned specific tasks the government may allocate funds directed at solving those problems.

2. Port Management

With the privatization of Colombian seaports, the tasks of managing those ports was transferred from the maritime authority under the Navy to the Ministry of Transportation. In 1991, as part of a program to privatize and liberalize Colombian economics, it was determined that the Ministry of Transportation could better manage the ports.

Privatization was intended to bolster competition and efficiency. Although these two objectives have been achieved from an economic standpoint, the strategic requirements of Colombia are not met because the government cannot guarantee any longer the continued operation of its seaports. Formally, the government found it necessary to use Naval personnel to operate the ports during strikes. However, the political liberalization in Colombia may not permit this in future.

3. Naval Industry

The bankruptcy of CONASTIL in the early 1990's is a major problem for Colombia in both the private and government maritime sectors. The shipyard originally was a Naval shipyard, with the primary responsibility of maintaining the Colombian Naval Forces. Later, the shipyard belonged to both government and private interests and performed its operations in both the private and the government sector, but the shipyard was still maintained with government funding and performed a strategic operation through its maintenance of the Colombian fleet. The

combination of union unrest and poor management of the shipyard has resulted in bankruptcy because the government will no longer fund the operation. Shipyards of lesser size still exist in Colombia and have economics related to small industry and fishing.

4. Merchant Shipping

Although the Merchant Marine is healthy in Colombia with the merger of FMG with a Mexican shipping interest, Colombia no longer has significant tonnage under its flag. However, there are many small independent companies that are thriving thanks to the economic liberalization policies of the 1990s. With these changes there is no world-wide recognized Colombian Merchant Fleet.

5. Fishing

Commercial fishing is now regulated by INPA. This task was previously performed by the INDERENA. This is not a major change, but there has been a more even management of these activities by the organization. Over the preceding ten years, there has been a steady increase in this sector of the maritime economy.

6. Science and Technology

Even before economic liberalization, the government emphasized the science and technology. In the maritime arena this has led to the creation of numerous organizations responsible oceanography, mapping, weather, and the marine environmental sciences in general.

One of the more significant acquisitions in the science and technology is two research vessels purchased from Germany. This is a long-term program and indicates the government's support of maritime science and technology.

7. Naval Power

The government has increased resources dedicated to the Naval service. It has implemented a program of new construction, updated technology, and increases in

the size of its Naval service. With these new programs, the Colombian Navy has acquired technology and expertise that are not dependent upon a single source.

C. FUTURE SCENARIOS FOR COLOMBIA'S MARITIME POWER

The future of maritime power in Colombia will be related to the future of Colombia as a Nation. In a worst case scenario, i.e., Civil Unrest, Civil War, and a criminal takeover of the government, maritime power in Colombia would not be important. In a more positive future of economic growth and prosperity, the maritime sector would be an important element. The following section addresses only the positive future for Colombia.

1. The Maritime Status Quo

Under the status quo the maritime sector will grow in parallel with the Colombian economy, however, Colombia will not realize the full potential of its resources. Without a central maritime vision the resources and assets of Colombia will be inefficiently managed. Without this vision, there is no direction for maritime policy and goals will be unrealized. With the loss of its shipyard capacity, Colombia may lose the industrial infrastructure required to maintain itself as a modern Naval power. Maintaining the maritime status quo therefore leads to an uncertain future.

2. Development of Colombia as a Maritime Nation

Under this scenario, Colombia would realize the full potential of its maritime resources. These resources would have a positive economic affect on Colombia. The utilization and protection of these resources would benefit future generations. A unified maritime vision for the Nation would ensure that Colombia in the future receives the benefit of its own natural resources.

If these resources are not part of the Nation's economic and political consciousness, then they will serve as an invitation to other Nations and groups to

violate Colombia's sovereignty. Therefore, if the resources are protected and utilized by Colombia, they will increase Colombia's maritime security.

D. STRATEGY

Based on the preceeding scenario there would appear to be a need for a common maritime vision. There are two methods to create this common maritime vision:

- The creation of a single agency responsible for all maritime activities. For example, a Ministry of Maritime Affairs.
- The creation of an advisory board to coordinate all maritime activities. For example, Maritime Advisory Board.

This author proposes that the creation of a single agency to manage all maritime activities would simply be a reorganization of the existing bureaucracy in the Colombian government and would not, in fact, create any new functionality. Existing organizations are assigned tasks related to their expertise and have been determined to be necessary to manage those maritime activities. What these organizations require is a common maritime vision, not common management.

The creation of a Maritime Advisory Board to coordinate, promote and monitor maritime activities is a much more efficient solution for creating a common vision. This advisory board would develop the direction and focus of maritime activity in Colombia. Its purpose would be to provide direction based on executive and legislative goals to the task related maritime organizations of the Colombian Government. This board would also advise the government in determining and realizing long-term maritime goals. In democratic governments with political changes, advisory boards serve as a repository for long-term goals.

1. Vision

The term 'Vision' refers to the ultimate goal of a policy. It is not necessarily an achievable goal, but it provides direction and guidance for the policy maker. The following is a list of statements which may be used to represent a long-term maritime vision for Colombia:

- Colombia will become a world wide recognized maritime nation.
- Colombia will fully exploit the potential on the use of seas for the nation's benefit, while following international law and regulations.
- Colombia's maritime organization and management will be an exemplary model for other developing countries.

2. What Does Colombia Have to do to Pursue This Vision?

- First, all maritime related agencies must unify efforts and objectives in order to influence the national decision making level. They have to understand that cohesion and a shared vision are key elements for success.
- Determine the priorities of Colombian national maritime interests.
- Once there is consensus of a shared vision, objectives and procedures must be determined/formulated.
- The next step is to implement a strategy that allows the maritime activities to comply with the priorities set by the national maritime interests.
- Once an advisory board is created, it will achieve the day to day actions necessary to consolidate the larger goals established in the maritime vision.
- Implement an efficient flow and supply of information to maintain and updated the decision process in maritime activities.
- The special advisory board must invite the private business sector to actively participate in the achievement of the established maritime objectives.

- The current and actual organizational culture has to be adapted to the vision and future of the Colombian nation.

3. Conditions for Success

- Management with quality and efficiency will be the key for success.
- Diversification and specialization will be promoted and supported. Tight and efficient coordination among agencies will boost development.
- The Colombian Navy must take real and tangible actions that demonstrate in-depth knowledge of the topic and knowledge of the management of maritime related activities as a whole.
- Take advantage of the existing communications network in the Colombian Navy. This system practically covers all maritime, river, and important ports. The aim should be towards the implementation of a Center for Information and Coordination of Maritime Activities
- The establishment of a central ocean policy development and coordination mechanism at a sufficiently high level in the executive branch to ensure agency cooperation and compliance, such as a Presidential Advisory Board for Maritime and Coastal Issues
- Simplification, reduction of overlap and functionalization.

4. The Role of The Colombian Navy

This process has to be led by the Colombian Navy based on the following premises:

- The integration of maritime activities is more than political action it is a matter of national welfare that requires the objectivity of an institution far from any political party.
- The administration of maritime related activities in Colombia has been very dynamic, especially in recent years. New agencies have been created and others have been reformed. Since its creation 61 years ago, the Colombian Navy has been the most stable maritime related institution,

and the institution that has supplied the most to the current level of maritime power in Colombia.

- As concluded in the organizational analysis, the Maritime Authority, under the Colombian Navy, is the agency with the most active level of coordination among maritime related agencies. It is not necessary to create a new agency in charge of this role. Any proposed change for improvement can be applied to the existent coordination agency.

- National Security is a matter that relies on a military institution more than any other agency. This proposal of Colombian Maritime Organization has clear connotations to the strengthening national security.

5. Suggested Objectives

- As a nation-state, to understand the value of the sea.

- An inter-oceanic canal with larger capabilities than the Panama canal is currently and imminent world requirement. Colombia has to take the lead in this topic.

- Reactivate naval construction

- Educate all levels of society to appreciate the importance of the seas.

- Incorporate fish food into the diet (basket)

- Integrate seas, rivers and lakes as a system

- Reactivate merchant marine

- Promote naval and maritime publications. In conjunction with all maritime related agencies, publish documents that give guidance to adequate use of the sea from environmental, economic and technical perspectives.

- Encourage research in Universities on maritime related topics

- Invite media to joint the venture, in order to encourage the incorporation of seas to the nation's life cycle.

- Promotion of maritime sports at international level and recreational activities at sea.
- Determine the actual proportion of GNP directly received from maritime activities.
- Continue with the modernization of ports process to make them competitive in the international environment.
- Establish in economic terms the actual potential related to uses and resources of the sea.
- Enhance science and technology related to the sea. As well as managerial skills.

E. SUMMARY

The proposed Advisory Board would provide the Colombian Government with a coordinated maritime policy and a long-term maritime vision. Without this vision, future Colombians will lose resources and opportunities to groups and Nations whose interest may not be to the advantage or to the interest of, the Colombian people. This would be, in fact, the result of the mismanagement of Colombia's maritime resources not the actions some external group. However, if a common vision is created, then Colombia will realize the full potential of its maritime resources and the Colombian people will receive the economic bounty of the proper management of those resources.

VI. CONCLUSIONS AND RECOMMENDATIONS

This study presented an analysis of Colombia's current level of maritime power. Chapter V addressed alternative strategies for the development of Colombia as a maritime nation. The following section will address the research questions and present the conclusions of the study.

A. CONCLUSIONS

The research questions for the study were as follows:

- What would be an appropriate model for an integrated picture of Colombia's maritime power?
- Based on that model, what is the current level of maritime power in Colombia in relation to previous Colombian history.
- What would be a feasible strategy for Colombia to pursue in order to become a maritime nation?

The study presented in Chapter II the modern models of maritime power. Maritime actives should be seen as a system. This theories would indicate a need for a common or shared vision of maritime power. The model of Colombian maritime power is shown in Figure 8.

- To properly manage maritime issues, it is essential that there be a common maritime vision at the national level. Currently, in Colombia this is not the case. Organizations responsible for maritime matters with one exception are at the secondary levels of the government. That one exception operates only in an advisory capacity to the President.
- The support or maritime consciousness of Colombia is low as compared to other Latin American countries, for example Chile.

- There is a clear potential for improvement in management, coordination, and efficiency of Colombian maritime activities.

- The Colombian Navy has always been a key actor in Colombian maritime issues. This is because it is the source of current maritime consciousness. In Colombia, Naval and maritime authority personnel both active and retired are involved in almost all maritime activity. However, the nation envisions itself as a land nation and has a low maritime consciousness.

B. RECOMMENDATIONS

Based on these conclusions the study presents the following recommendations:

- The Colombian Government should establish an Advisory Board to the President for maritime issues in total. This Advisory Board should also have the additional task of coordinating and providing a vision for the various specialized agencies that deal with maritime issues. This would give a common vision and direction to the management of maritime issues. It would also provide that the vision was created at the highest level of the Colombian Government.

- There should be a continuous and permanent analysis of the maritime situation and its environment. This analysis would serve as resource for maritime policy makers.

- Research should be established on maritime issues for the development of government policy related to those issues. The best solution would be the establishment of a permanent institution that would be a repository for a long-term view of maritime matters.

LIST OF REFERENCES

1. Hill, Rear Admiral J. R., *Maritime Strategy for Medium Powers*, Annapolis, Maryland: Naval Institute Press, 1986.

2. Jingwu, Qin, "Rapidly Growing Maritime Industry in China." *Renmin Ribao*, Overseas Edition in Chinese, 20 Dec. 93, p. 1. FBIS-CHI-94-003

3. Till, Geoffrey, *Maritime Strategy and the Nuclear Age,* Second Edition, New York: St. Martin's Press, 1984.

4. Morris, Michael A., *Expansion of Third-World Navies*, New York: St. Martin's Press, 1987.

5. Kearsley, Harold J., *Maritime Power and the Twenty-First Century*, Worcester, England: Billing and Sons Ltd, 1992.

6. Martinez, Admiral Jorge, "Oceanpolitics in the Development of Chile," *La Oceanopolítica en el Desarrollo de Chile*, Revista de Marina N0. 3/93, Volparaiso, Chile, n.d.

7. Sam Bateman, personal e-mail

8. Mahan, Captain A. T., *The Influence of SeaPower Upon History 1660-1783*, New York: Dover Publications, Inc., 1987.

9. Hobson, J. A., *Imperialism, A Study*, London: George Allen & Unwin Ltd., 1954.

10. Corbett, Julian S., *Some Principles of Maritime Strategy*, New York: Longmans, Green and Co., 1918.

11. Romero, Vice Admiral Edgar, "Analysis of the Context of Maritime Power in Colombia and the Caribbean," in *Defensa Nacional.*

12. Chircop, Aldo, "Competing Demands for Ocean Use," Maritime Security and Conflict Resolution, Hailfax, 24-26, June 1993.

13. Gutierrez, francisco, "La Pesca Artesanal en Colombia," in En Conmemoracion de los 25 años de la Creación de la Comisión Colombiana de Oceanografía, n.d.

15. *Fairplay World Shipping Directory 1996-1997.*

14. Hernandez, Armando, "La Industria Pesquera en Colombia," in En Conmemoracion de los 25 años de la Creación de la Comisión Colombiana de Oceanografía, n.d.

16. Walsh, Don, "National Organization for Ocean Management: Centralization vs. Functionalization." *Making Ocean Policy*, Francis W. Hoole, et al. ed., Boulder, Colorado: Westview Press, 1981.

17. Vallejo, Stella Maris, "Integrated Marine Policies: Goals and Constraints," in *Ocean Management in Global Change*, ed. Paolo Fabbri, New York: Elsevier Applied Science, 1992.

18. Roman, Enrique, *Analisis Historico del Poder Marítimo en Colombia* unpublished.

19. Galbraith, Jay R., *Designing Organizations*, San Francisco: Jossey-Bass, 1995.

20. Bolman, Lee, and Terrence Deal, *Reframing Organization*, San Francisco: Jossey-Bass, 1991.

21. Idrobo, Ismael, "Analysis of Naval Organizations within Maritime National Interests: The Case of Colombia." Master Thesis, Naval Postgraduate School, Monterey, CA, 1997.

INITIAL DISTRIBUTION LIST

		No. Copies
1.	Defense Technical Information Center 8725 John J. Kingman Rd., STE 0944 Ft. Belvoir, VA 22060-6218	2
2.	Dudley Knox Library Naval Postgraduate School 411 Dyer Rd. Monterey, California 93943-5101	2
3.	Professor Jan S. Breemer Code NS/Be Naval Postgraduate School Monterey, California 93943-5102	1
4.	Professor Roger D. Evered Code SM/Ev Naval Postgraduate School Monterey, California 93943-5102	1
5.	Señor Almirante Comandante Armada Nacional CAN Avenida El Dorado Santafé de Bogotá, Colombia South America	1
6.	Señor Contralmirante Director Escuela Naval "Almirante Padilla" Escuela Naval, Isla de Manzanillo Cartagena, Colombia South America	1

7.	Señor Mayor General Director Escuela Superior de Guerra Calle 11 #101-80 Santafé de Bogotá, Colombia South America	1
8.	Commodore Sam Bateman University of Wollongong Northfields Avenue Wollongong NSW Australla 2522	1
9.	Señor Contralmirante Director General Marítimo Calle 41 #46-20 CAN Santafé de Bogotá, Colombia South America	1
10.	President of the Naval War College Library Naval War College 686 Cushing Rd. Newport, Rhode Island 02841-1207	1
11.	LCDR Juan J. Jimenez Calle 6 # 2-18 Apt. 7E Cartagena Colombia	2

DUDLEY KNOX LIBRARY
NAVAL POSTGRADUATE SCHOOL
MONTEREY CA 93943-5101

DUDLEY KNOX LIBRARY
3 2768 00339200 2